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ART. I.—*An Address on the Improvement of the Medical Profession;* delivered before the Medical Society of Tennessee, at its twelfth annual meeting, in Nashville, in May, 1841. By LUNSFORD P. YANDELL, M. D., Prof. of Chemistry and Pharmacy in the Louisville Medical Institute.

It is now ten years since I took leave of this Society as a regular member, and, in resigning the office of Corresponding Secretary, which it had been my honor to hold in it, attempted a sketch of some of the leading objects which such associations are expected to promote. After this lapse of time, it might not be unprofitable, on the present occasion, to enquire how far these objects have been advanced by the labor of the Society. As one of its original members, entertaining a warm personal regard for the individuals who have given

it the benefit of their talents, learning and time, and strongly attached to it, also, by feelings of State pride, I might not prove a very impartial witness in the case; but I think even those the least apt to be satisfied, and those the readiest to find fault must admit, that the Medical Society of Tennessee has not existed in vain. I believe the most skeptical and the most censorious will agree, that it has added something to the standing of the medical profession of the State. Instituted for the purpose of rendering the healing art more useful to society and more honorable in itself, one of the objects contemplated by those who framed its constitution, and by those who first met here to organize the Society, was the *suppression of quackery;* and I know that not a few of those who assembled on that occasion have long since withdrawn from the Society, in despair of its ever being able, with its present powers, to accomplish this great work. Failing in what they deemed the chief concern, they have been disposed to look with indifference upon all the other ends for which the Society was created. Disappointed of the treasure for which, with sanguine tempers and stout hearts, they began to dig in this field, they have appeared to contemn the harvest of fame which the Society is gathering for itself and the medical profession in Tennessee. No one would rejoice more heartily than I should at seeing the deep stain of quackery wiped from our profession. It is impossible to look over the world and see how this "foul anomaly" cleaves to medicine in all lands and amongst all people, and not feel pained and humbled on account of the weakness of human nature. But it has long been the conviction of many of the members of this Society, that quackery is not to be suppressed by the strong arm of the law, and least of all in our free Republic. This is not the nation, and this is not the age for monopolies. The spirit of the people and of the times is averse to prescriptive privileges. Laws to restrain empiricism, could they be enacted, would be enforced only when they were in accordance with public sentiment. Opposed to it, or in advance of it, they would be a dead letter. Men will employ those whom

they fancy possessed of the skill to relieve their sufferings and prolong their lives, and while constituted as they are, they seem fated to be the dupes of the boastful pretender. Laws do not avail in a case like this. There are rights which men cannot be made to surrender, and although civil law might deprive the empiric of many of the privileges of the educated physician, the sympathies of the people, awakened for one who seemed to be downtrodden by the privileged, would amply compensate him for all that he had been obliged to surrender to the claims of the civil magistrate. The remedy, therefore, would seem to lie, not with the framers of our laws, although a wise legislation might do much for Medical science, but with the profession itself, who must rid society of empiricism by improving the healing art—by making all the professors of skill in it truly skilful—by wiping away all *opprobria medicorum*—by rendering the cure of disease safe, certain, and agreeable.

If it be objected that in this a task is proposed which is above all human power—that there must remain, to the end of time, imperfections in the healing art—diseases which no remedies can reach—diseases growing out of that imperfect organization which bad indulgences have entailed upon the race, my reply is, that so long as our systems of cure remain discordant and our remedies uncertain, so long as there continue to be maladies that defy the resources of enlightened art, we must make up our mind to see empiricism flourish; for so long will there be found men loud and impudent in professions of catholicons and panaceas. Hope springs eternal in the human breast, and the victim of phthisis, just dropping into the grave, will eagerly catch at every "pulmonary balsam" that promises to restore his wasted energies and turn back the ebbing current.

It has, therefore, always appeared to me a great mistake in those members who have abandoned the Society because its charter gives it no power to regulate the practice of physic, and to compel students of medicine, like students of law, to pass a satisfactory examination before assuming its high re-

sponsibilities. Most devoutly must every philanthropist wish that such a regulation could be enforced, and that those only were allowed to become the guardians of the public health, who, by a diligent course of study and the use of all the lights afforded to the medical student, have prepared themselves thoroughly for so sacred an office. But no such requisition is made by the statutes of Tennessee; in very few of the States does any such regulation obtain, and where it has an existence under forms of government more energetic than ours, even amid the stern despotism of the European states, empiricism is found flourishing, side by side, with medicine in its most scientific, most improved shape. England has been called the "*Paradise of Quacks;*" and yet medicine has been liberally patronized by the British government, while, for many centuries past, there have flourished there some of the great lights of the profession. There have lived physicians the most erudite and accomplished—of attainments so varied and profound, that the great scholar, Parr, was compelled to concede the palm of learning to the profession of which they were members. But in the midst of these medical philosophers, and in the shade of their ancient and richly endowed universities, the empiric has reared his standard and attracted his host of believers. Was it not, indeed, on that island, and among that nation of savans, that Mesmerism gained its strongest foothold and exercised the widest dominion? Men appear to have an organ of *gullibility*. Humbuggery prevails in every trade and profession. Nothing is so sacred as to be beyond its reach; nothing so humble that it will not descend to it. It has prevailed in theology and in medicine, in politics and in education. Animal magnetism has served to lead astray the gifted and the scientific, as ghosts, witchcraft, the hazel rod, and seventh son, have, time immemorial, been the ignes fatui of the vulgar.

But, I repeat, because we cannot, all at once, cut this monstrous evil up by the roots, it is bad policy to surrender the Society, and give over our efforts at improving the medical profession. This is a distemper of the public mind for which

our art has no specific. In the management of it we must rely upon "general principles." It is of that class of disorders which we wish to see our patient out-grow, or which must be cautiously and gradually worked out of the system by a wise course of hygiene. I regard it as a point settled, that we cannot suppress quackery by any force likely to be granted by the legislature of the State; but it is in the power of the profession, acting in a body, and with wisdom, to elevate medicine to a point where it will not be affected by empiricism. And to this point it is the tendency of this Society to raise it in the State. It has already carried the fame of some of its members beyond the limits of the commonwealth. Many papers read at its meetings have been printed, and have found their way into the medical journals of the country. Much matter has, thus, been brought before the public which, else, had never seen the light; and, in this way, have been communicated to the world facts which will aid to swell the mass of medical learning and experience. Above all, the Society has quickened the energies and fired the ambition of many physicians who will henceforth labor with redoubled zeal for the promotion of medical science. It has now been eleven years unintermittedly in operation. Its meetings have sometimes been thinly attended, but not a year has passed without the assembling of a portion of its members, the reading of a number of papers, and the publication of transactions. The medical topography of several regions of the State has been given to the world, and there can hardly be a doubt, that the physicians who were engaged in investigating the sources and nature of the diseases of their neighborhood have thereby become better practitioners.

This appears to me the true path in which the Society ought to progress. Its literary exercises are its vital principle. They are its circulating fluid, and when they cease, the Society, for all useful purposes, may be pronounced dead. They give to it all its interest, all its influence abroad, and all its value in the estimation of men. Upon these must rest its claims to the gratitude and respect of other generations. It

speaks well for the perseverance of its members, that, in a region where so many enterprises are set on foot, and so few pursued to a successful completion, it has continued to hold its meetings without interruption for so many years.

The influence of the Society upon medical education will be salutary, and this is one of the objects of which it should never lose sight. It is, perhaps, rather a fashion with gentlemen whose own literary attainments are not remarkable to declaim against the slender qualifications of their brethren, and clamor for a more thorough preparatory education. So far as my acquaintance goes, it is among those whose own preliminary training has been most deficient that this complaint is loudest. None, it is said, look with so much indulgence on the "fears of the brave and follies of the wise," as those who are themselves wise and brave. It might not be amiss for those gentlemen who are so clamorous for high literary excellence, to remember the case of the illustrious John Hunter, who was never able to write correctly his own mother tongue, and knew no other, but who, as an anatomist, physiologist and surgeon, was the glory of his own times, and through all time will be regarded as one of the great luminaries in medicine;—a man who drew his information directly from nature, and studied the laws of the animal economy and of disease in his dissecting room, in hospitals, and upon the living systems of the inferior animals. He went at once from the carpenter-shop of his brother-in-law to the anatomist's table, and without any of the aid which learning affords, not only reached the head of his profession, but took up the science where his predecessors had left it, and enriched it with more valuable discoveries than a whole generation of common minds could do. I might also cite the example of another surgeon whose fame is scarcely less than that of John Hunter. I mean Sir Astley Cooper, who likewise entered upon the study of his profession without much preparatory education, and never made pretensions to scholarship. Since I wrote this line I have read that he, too, is numbered with the great departed. Full of years, honor and riches, he has been

called away from the field of his brilliant triumphs. For half a century he stood confessedly at the head of his profession in the great British metropolis, performing every great surgical operation, lecturing to large classes of eager pupils, and amid all his labors finding time to compose splendid works, the result of his own observation and experience, but, all the while, comparatively negligent of the style in which his thoughts were conveyed.

But, while the eminence to which these giants in our profession attained, in spite of the deficiences of their early education, ought to mitigate the severity of those gentlemen who bear so hard on physicians not having the good fortune to be skilled in classical learning, it is far from my intention to intimate, that their example is one to be imitated, in this neglect of early culture, or to depreciate thorough mental discipline and finished scholarship as helps to the acquisition of medical knowledge, and as accomplishments which have reflected upon our profession a glorious lustre. "*Learning*," as it is expressed in that curious book, "the Doctor," "*is a brave thing*." We cannot have too much of it. But it is the "skill of the physician," according to the son of Sirach, "which shall lift up his head, and in the sight of great men cause him to be in admiration." And the history of Hunter and Cooper, not to name others, and not to come nearer home, may teach us, that consummate skill is attainable in our profession without the aid of Greek or Roman learning, without the study of Hippocrates in the original, and even without a mastery of our own vernacular tongue! Nevertheless, let us frankly acknowledge our deficiences. I believe every physician in the country deplores the limited attainments of too many of the profession, and admits that the general standard is too low. As a profession we are in the habit of neglecting polite literature, and what is far worse, have been satisfied with very shallow draughts at the spring of medical learning. It is a great error in our system of medical education, that students are permitted to enter upon the practice of physic after too brief a term of pupilage; for although I agree that the tedious

novitiate which the ancient system imposed may be abridged with advantage, since Hippocrates is not to be translated nor Cullen's Outlines committed to memory, still I must contend that "*six weeks' study, off and on,*" is too short a period to indoctrinate even the aptest pupil in all the mysteries of our comprehensive and most difficult art. Five years was the term formerly required. Dr. Rush studied five years; but he thought, and was in the habit of saying, that, so much had the introduction of principles in medicine simplified it, the students of his day could accomplish more in three years than he was able to do in five. No doubt this is true. No doubt that in three years one may acquire more valuable medical knowledge than students did in thrice three years under the tuition of Boerhaave, or even of Cullen. But if medicine has been so much simplified, it has also been greatly extended. Facts have been multiplied in every department of it, and new branches have been developed. How vastly, for example, has the range of chemistry been widened since the time of Boerhaave, and even since Rush was a teacher of it, and Pathological Anatomy, General Anatomy, Hygiene and Medical Jurisprudence may be said to have been created since the time of the great teacher of Leyden. That it is possible, in the short term devoted to study by a majority of young men before taking their degrees, to compass a knowledge of these branches, and of all the other parts of medical science, it is preposterous to suppose. The most that can be attained in that time is a general bird's eye view of the whole field, with a knowledge of the more practical departments sufficiently minute to enable the young practitioner to pursue his calling with reputable success. If he would rise to eminence in his profession—if he aspire to the rank of a learned and accomplished physician, he must continue his studies faithfully during his whole career.

The primary education of young men designed to pursue medicine as their profession, I have admitted, is not in every case as finished as could be desired. And this is one of a class of crying sins of all this region of our great country—a ne-

glect of the early education of our sons. The South-Western and Southern States have long slumbered in regard to this great concern, and, if they would maintain their rank among civilized nations, must arouse from their lethargy. I believe they are already waking up. I believe the evil is beginning to be felt seriously, and this is a material step towards its correction. But until the whole system is improved, it is vain to hope that students of medicine will be prepared for the profession by a judicious and complete course of preliminary training.

But, supposing the early advantages of the student to have been all that is desirable, the time usually devoted to medical study is too short. Many young men obtain the degree of M. D. after less than two years' study. In such instances, no doubt the application of the pupil has been good; but however studious he may have been, and however satisfactory the examination he is able to pass, it must, nevertheless, be admitted that the knowledge he has acquired in this time is comparatively crude, and his experience in all that relates to the practice of medicine in its several departments quite too limited for the exigencies that he goes forth to encounter. The simplest operations and processes of the art must be practised by the pupil before he is prepared for the duties of his profession, and for this he must have time as well as opportunity. There must be patients to be examined and administered to, either with his private preceptor or in the wards of a hospital. Time is necessary for this; he cannot be engaged with his books while he is studying disease at the bed side, and yet much reading is indispensable as a preparation for this exercise, for he ought to be well grounded in the principles of medical science before he engages in the investigation of the actual phenomena of disease.

But I have yet to mention the defect, in the system of medical education too generally pursued in the Western country, which is doing most to retard the march of medicine to the high place in the public confidence which it is destined to at-

tain. The elementary education of students of medicine is too limited. We grant this, and hope, as the country advances in wealth and intelligence, that this complaint will cease. The period of professional study, we have also admitted, is too brief, and the medical schools of the country, aided by the private practitioners, it is to be expected will ere long correct this evil. But that which is the sorest evil is not so much these, as the engaging of so many young men in the practice of physic after a short course of reading, without visiting any medical school, and, consequently, without any practical knowledge of anatomy, healthy or morbid, and with but little of operative surgery. The influence of this upon the profession can easily be imagined. Such practices inevitably sink it in the public estimation, and tend to bring every class of practitioners to the same level. The population of Tennessee is greater, by one third, than that of Vermont, its climate less salubrious and the number of its physicians probably twice as great. Yet, during the last winter, according to the printed catalogues, Vermont had as many of her sons in attendance on medical lectures as Tennessee. The inference is, that, in the latter state, very many assume the responsibilities of an art involving human life without those advantages which are now admitted, on all hands, to be necessary to the acquisition of a competent knowledge of medicine. If I am mistaken as to the extent and magnitude of this evil, no one will deny that it has an existence in the state, any more than that the correction of it is demanded alike by the dignity of the medical profession and the best interests of society.

Since I have engaged in the task of enumerating the defects which attach to our profession, and which it is one of the purposes of this Society to remedy, I must not pass in silence over one which attaches to the Medical Schools in the United States. I allude to the shortness of the lecture term. In every school of distinction the number of chairs is from six to eight. Anatomy, Surgery, Chemistry, Materia Medica, Theory and Practice, and Obstetrics are taught in all; and

in many there are chairs, also, of the Institutes of Medicine, Pathological Anatomy, and Medical Jurisprudence. And yet the period devoted to delivering a full course of instruction on all these subjects is but four months. The consequence is that the lectures are too much crowded, six a day being common, and, in some schools, seven or eight each day in the week, Sabbaths excepted, while, it is plain, the lecturer must be straightened for time and hurry over many important subjects. If this were the fault of one school, or of a few, it might the sooner be remedied; for students could then resort to those in which more time was given for arranging and assimilating the matter thrown out by teachers, and more leisure allowed for attendance upon hospitals and the anatomical rooms, now universally regarded as the most profitable sources of medical instruction. But it is one which attaches to all alike. In none is the regular term extended beyond four months, while in some it is not even so long. This being the fact, it becomes a difficult matter to apply the corrective, no school venturing to take the lead lest the additional expense imposed upon pupils by their longer absence abroad should deter some from attending it. The proverbial impatience, too, of American young men—their haste to rush "*in medias res*," and complete the irksome period of pupilage militates against such a change. It is with difficulty that a respectable portion of them can be prevailed upon, during the first winter of their attendance, by the entreaty of professors, and by all the terrors of the "*green box*," to remain to the end of even our short sessions; and not a few hurry off, from all the schools with which I have had any acquaintance, by the first of February, thus throwing away the benefit of one fourth of the whole course; as if their sole object in leaving home were to get the name of attending lectures. In this way they are doing much to detract from the reputation of medical schools, and to bring down the character of the profession. The schools, most unwisely as I conceive, adhere to their short sessions, and students, impatient of labor, curtail them still further; so that, practically, for very

many of those who attend but one course, the term is reduced to one quarter of a year. And with the knowledge of man's complicated system and of the diseases which assail it, with the slender outfit derived from this three months' study at a medical school, and a few months' previous reading, do many young men launch out upon the perilous voyage of life—perilous alike to their own reputation, and the health of those who confide in their skill. There is a solemn duty which lies before us here, and equally before the private preceptor and the public teacher. The practitioner, when he sends his pupils to a medical school, ought to charge them to remain until they should hear the last word of the valedictory. Every father should exhort his son to hold out to the end, and with this aid from a quarter so influential, professors would be able to maintain an undiminished class to the end of the term.

Having now stated with candor what I deem defects in our present system and the remedies to be applied, I will declare my belief, that if students avail themselves, in good faith, of all the facilities for the acquisition of knowledge which the American schools of medicine afford, notwithstanding the courses be too short and the lectures too crowded, they prove when they enter upon the active duties of their profession as energetic and successful practitioners as are turned out by the schools of Europe. In the hospitals, which are now found in connexion with nearly every medical institution, they have opportunities of witnessing many of the surgical operations that are likely to fall in their way, and of observing the symptoms and treatment of disease under teachers of learning and experience; while, in the dissecting room, if they be diligent, they may make themselves practical anatomists, and acquire the mechanical tact that will fit them for the duties of the surgeon. Under this system, there are young physicians every year coming forth, from all our schools, who, for judgment in diagnosis, and skill in the management of disease, would compare with the élèves of Paris or London. I speak thus confidently because I have had the most repeated opportunities of comparing the success of

American graduates with that of young practitioners, who have visited the medical institutions of Europe, and because medical statistics bear out the assertion. It is in no spirit of overweaning national vanity that I affirm that I have not found the graduates of London, Paris, or Edinburgh superior, at the bed side, to graduates of the American schools of equal capacity, who have devoted themselves with equal assiduity to their studies. That in general information and literature, and also in a knowledge of pathological anatomy, those of foreign education may have the advantage, I will not deny; but in their ability to treat disease they have in no wise manifested a pre-eminence over those who have studied medicine at home. The medical statistics of France, where the science may be considered as at its highest point, afford no ground of boasting to our French brethren over the physicians on this side of the Atlantic. Better anatomists we concede them to be; in pathological anatomy, particularly, we yield the palm to them, as must the profession of every other nation—that they are cultivating all the branches of medical science with greater industry and with higher success, and are taking the lead of all the world in toxicology, physiology, and pharmacy, we readily admit; but, after all, when it comes to the application of the principles—"to war with death and stop his flying dart," the statistics of the two countries show, that the practitioners of the Mississippi Valley cure as large a proportion of their patients, as the pupils of Louis or Broussais. I will go further and say, that the surgeons of this region have enjoyed a degree of success in their operations, especially in that for stone in the bladder, quite unrivalled by anything that the history of the hospitals of London or Paris can adduce. I do not pretend to affirm that the fact is proof of superiority of skill in Western surgeons, but it is one which justice requires to be stated, and I think it must be admitted, that students are not badly taught when the practitioners are proving themselves equal to the highest functions of their profession.

The practitioners of the South-west are wedded to no theory

in medicine; for if they have, at different times, been carried away by the elegant speculations of Rush, or the bold dogmatism of Broussais, or the simple theory of the Congestive school, their sound, good sense and innate independence of spirit have brought them back, after a temporary bondage, to a wise system of eclecticism. If they make few additions to the stock of medical knowledge, they are on the alert to catch the first dawnings of any discovery that may arise in another hemisphere. The new remedy introduced into the hospital at Dublin or Paris, in the spring, will be in the hands of the practitioners of Tennessee and Missouri before midwinter, and the new operation performed by Dieffenbach, in Germany, at the beginning of one year, will be repeated by the surgeons on the Ohio and Mississippi before the beginning of the next. So facile and rapid, in our day, is the interchange of knowledge, and so prompt the physicians of the United States to seize and apply whatever may be devised, by human ingenuity, for the relief of human suffering in any quarter of the globe.

This devotion to system to which I have referred, and from which we claim exemption—this proneness in the minds of men "*jurare in verba magistri*"—this blind belief in theory, and the perfectibility of medicine, has made sad work in the profession. For how many centuries after Hippocrates flourished were men content servilely to tread in his footsteps, assured that the science and the art of healing could be carried no farther. Then came Galen, who was but little more than a commentator on the Father of medicine—"*fimbria Hippocratis*"—but with disciples so ardent and confiding as to be ready to aver, that nature herself had changed, rather than admit the probability of their masters having gone astray in their description of the human body. And at a later day, and after some centuries of darkness, Bombastus Paracelsus arose to decry and set at naught all that Hippocrates and Galen had written concerning medicine. "The down on my bald pate," he declared—"*stultissimus pilus*"—knows more than all your doctors; the very

buckles on my shoes are more learned than your Galen and Avicenna; and my beard has more experience than all your universities." Claiming to be himself "*primus medicorum*," he boasted that he made more famous cures than all the physicians in Europe besides, denounced Hippocrates and his followers as infants, idiots, and sophisters, and, seated in his professional chair, at Basil, with great solemnity, burnt the writings of Galen and Avicenna. So Thessalus, before, had written to the Emperor Nero, that he had founded a new sect, *which is the only true one.* "I have been forced to this," he says, "because none of the physicians who have preceded me have discovered any thing useful either for the preservation of health or for the cure of diseases, and because Hippocrates himself has put forward many dangerous maxims. His system was a very simple one, leaving but little to the discrimination of the physician; namely:—that nature, in each case, points out to the patient what is most fit for him, and that, hence, he should be diligently supplied with every thing that he may fancy.

But, anon, Hahnemann appears, to found still a newer school, and put forth a better system of cure, and like his predecessors, in the same line, he must needs begin by denouncing the labors of others as vain and unprofitable. In allusion to the Hippocratic Medicine, he says, with an arrogance which the prince of quacks himself could scarcely exceed, "since this art only consists in a gross imitation of a dangerous and insufficient process, it must be admitted that the *true* medicine was not discovered *till by me.* It is the infallible oracle of the art of curing; it is the sole mode of really curing disease, because it reposes on an eternal and infallible law of nature." And what are these vaunted principles? Truly, these: that it is absurd to seek for the cause of symptoms in order to remove them! that we must cure diseases by the exhibition of medicines which would produce them in a healthy person; that the dose should be infinitely small; and that there are but three original diseases from which spring all the maladies that afflict mankind, namely: "syphilis, sy-

cosis and the itch," corresponding to "the oil, the spirit and the salt," of Paracelsus, "which burn the patient as hell does."

Nor was Broussais, with all his genius, learning and real merit, much more modest in the annunciation of his doctrines —the physiological medicine. "After so many vacillations in its march," says he, "medicine at length follows the *only path which can conduct it to truth*—the observation of the relations of man with external modifications, and the relations of the organs of man one to the other." "What," he exclaimed, in the words of the great Bichat, "is observation, if we are ignorant of the seat of disease?"

This is the language of the *Anatomical School* of physicians, who, with the Hippocratists, divide the Faculty of France. With them, all that had been observed and experienced from the earliest times of medicine down, passes for nothing. Nothing has value with them which the dissecting knife does not reveal or sanction. This is their *experimentum crucis*, the universal test to which every phenomenon in disease must be submitted; and with a fate harder than that of the blind poet, "with knowledge from one entrance quite shut out," they obstinately refuse to receive intelligence through every avenue but one. Symptoms, according to this school, are hieroglyphical until numerous autopsies have deciphered them, and all cures are empirical, and at best but fortuitous, unless made in accordance with the principles of pathological anatomy.

Happily, we are committed to none of these systems. In the spirit of that freedom which our institutions breathe, we welcome truth from whatever clime she may come, doing justice to all schools, forming entangling alliances with none. We are all Hippocratists; we are all Physiologists. We are even willing to be so far Homœopathists, as to give strychnia in paralysis, and bark in intermittent fever. We hail pathological anatomy as a noble branch of Medical science, and honor our French brethren for the zeal with which they have cultivated and enriched it; but in doing so, we have not learnt to despise all that our fathers treasured up in Medicine of

sage experience and enlightened observation. While we glory in the advances which the healing art has made, and is destined to make, in the path that Bichat pointed out, and Broussias pursued with so much success, we cannot forget, that without any knowledge of the pathology of Small Pox, Sydenham declared the true principles of its treatment; we cannot forget that it was observation, not to call it accident, which placed in our hands the prophylactic of this loathsome disease, and we are obliged to own, that by the same process we came in possession of Peruvian bark, opium, antimony, and mercury. We cannot, therefore, agree to discard observation and experience as among the instruments by which the noble fabric of our art is to be reared and carried towards perfection. We do not profess to be giants in Medicine, but standing as we do upon the shoulders of these giants of a former time, we suspect that we may be able to see farther and more clearly than they.

May 5, 1841.

ART. II.—*Case of Disunited Fracture successfully treated with the Seton.* By WILLIAM H. DONNE, M. D. Reported by A. Martin, resident student in the Louisville Marine Hospital.

William Wheeling, a laborer, a native of Ireland, aged 23 years, of intemperate habits, was admitted into the Louisville Marine Hospital on the 14th June, 1840, with a transverse fracture of the tibia about three inches below the femoro-tibial articulation, caused by falling into the hold of a steamboat and striking the limb against a bar of iron. There was no apparent displacement of the fragments, and very little tumefaction of the soft parts was observed in the vicinity of the fracture. On moving the limb in various directions, crepitation was distinctly audible, and the superior fragment could

be made slightly prominent by flexing the knee. No fracture of the fibula, however, could be detected upon the most careful examination. The roller was firmly applied by Dr. T. L. Caldwell, then in attendance, from the toes upwards above the point of fracture, with injunctions to moisten it as often as necessary with aqua ammoniæ and diluted alcohol. After the tumefaction had subsided, two splints, composed of book-binders' board, previously soaked in warm water, were applied and moulded to the limb by the roller, which was carried above the point of fracture as in the first dressing. The limb was now placed on an inclined plane, with directions to keep the dressings immediately over the fracture moistened from time to time. This treatment was continued for six weeks, when the splints, &c. were removed. Upon examination it was ascertained that no union had taken place. All dressings were then discontinued, and the patient permitted to take exercise on crutches through the ward, for the space of three weeks without any improvement. Friction, and rubbing the fragments together by moving the limb in different directions, were likewise resorted to without any beneficial results. On the 21st of August, with the concurrence and assistance of Dr. T. L. Caldwell, (whose tour of attendance had expired a few weeks previously,) Dr. Donne introduced a seton between the fragments, by first dividing the integuments and aponeuroses in the anterior tibial region to a small extent. The tibialis anticus muscle presenting itself, a few of its fibres were detached from their connection with the outer surface of the tibia, to facilitate the passage of the needle. The hemorrhage was comparatively slight, nor did the patient complain of much pain during the operation.

Five days elapsed before there was any appearance of inflammation, which increased gradually until the 27th, when the wound made by the egress of the needle began to suppurate.

29th. Suppuration in both wounds; patient complains of a stinging pain in the vicinity of the fracture.

31st. Pain more severe; inflammation much diffused.

Sept. 2nd. Complains of great pain; local inflammation increased.

4th. Scultetus' bandage applied, moistened with ammoniated lotion.

7th. Inflammation still extending; some febrile action; tongue furred; restless through the night; bowels open without medicine. Seton removed; a considerable quantity of cream coloured pus with some coagula discharged from the internal aperture.

10th. Internal wound continues to discharge healthy matter.

12th. The quantity of matter diminished; a compress with an aperture in its centre, and Scultetus' bandage applied.

14th. Discharge much diminished; roller applied.

17th. No pain in the limb; use splints and roller.

20th. Wounds closed: ordered porter and generous diet.

25th. Severe pain in the fractured limb; restless during the night.

26th. Bandages and splints removed; inflammation of the integuments and subcutaneous cellular tissue in the vicinity of the internal wound; limb much swollen; fluctuation evident; about eight ounces of sanguineo purulent matter discharged.

27th. Matter again collected; counter opening made—affording a free discharge.

Oct. 1st. Discharge very slight; pain greatly diminished by incision.

4th. Health improving; discharge ceased; counter opening closed.

8th. Free from pain; limb seems firm; no appreciable motion in the site of the fracture.

12th. Tumefaction of the limb diminished; patient exercises on crutches, and can support more weight on the leg than at any previous time since the accident.

16th. Patient walks about the ward with a cane: has a good appetite, and rests well at night.

20th. Bandages dispensed with; limb free from pain and daily gaining strength.

28th. Patient can bear his whole weight on the limb; walks well without any inconvenience.

A few weeks afterwards he was discharged cured.

There seems to be much discrepancy of opinion relative to the length of time that the seton should be retained in cases of disunited fracture, Dr. Gibson and others insisting on its retention for months, or until the deposition of ossific matter shall have commenced, while Mr. Liston, who is equally orthodox, thinks one or two weeks sufficient.

Nothing definite, we imagine, can be laid down as to the time which may be required to induce ossific deposition by the seton, for not only are constitutional peculiarities to be taken into consideration, but the location of the injury, and many adventitious circumstances, must influence the recuperative efforts of nature.

ART. III.—*Objections to the Operation for Hydrocele by Injection, in comparison with that by Incision.* By THOMAS CARROLL, M. D., of Cincinnati, Ohio.

I believe most medical men in this country are favorable to the operation for Hydrocele by injection, although there are not a few well authenticated facts going to show that this mode of operating has not unfrequently failed, and that it has sometimes been followed by the most disastrous consequences. Failure, indeed, has followed where the operation was performed in the best manner; and evidence is not wanting to prove that death has resulted from it, where little or no blame could be attached to the unfortunate operator. If the tunica vaginalis be healthy, and a certain degree of excitability exist, so that the liquid injected will stimulate just enough to cause the production of that peculiar fluid by which serous surfaces are united, the operation will prove successful, unless some unforeseen circumstance should take place. But

where this state of things does not exist, failure will be the result. The following cases will serve to demonstrate this matter better than any train of reasoning which I could lay before the reader:

L. H. of Belmont county, Ohio, aged 60, called on me some time during the summer of 1840, for the purpose of obtaining relief from an enlargement of the scrotum, which had commenced 28 years before. I found the patient in bed, with pain in the loins, fever, and soreness of the tumor, which occasionally existed; but, within the last few weeks, had been more severe and of longer duration, so that the patient was mostly confined to bed.

On examination, I found a hydrocele of the left side, reaching nearly to the knee, being twenty-two inches in its greatest circumference, and sixteen in its least. The prepuce was found on the side of the sac about one-third of its length downwards; the glans penis was more than two inches farther back, yet it could be pressed through the opening of the prepuce when necessary. My patient had never, until within a few days of the time of my visit, submitted himself to the examination of a physician, but was now willing to undergo any operation which would relieve him of his sufferings.

I proceeded to operate by making an incision on the upper part of the sac about six inches long, which reached to the more depending portion. I found immense thickening of the parietes, with enlargement of the cord, epididymis, and testicle, but this latter organ was not so much increased in size as the other tissues. The cord and epididymis were each not less than three-fourths of an inch in diameter. The upper part of the sac had become partially ligamentous, in consequence of the immense appendant weight. Probably the sac with its contents, after the discharge of water, would have weighed three pounds. On examining the inner surface of the sac, I found two ulcers, one on the inferior portion of the cord, and the other on the testicle; these ulcers were each the size of a ten-cent piece, and of a black color. A strip of soft muslin was laid in the wound, with each end emerging

from the angles of the incision, the lips of which were approximated by adhesive strips. During the first forty-eight hours fomentations of warm water were constantly applied, after which emollient poultices were used for about two weeks; then the sore was dressed with simple cerate, until the cure was perfected, which took place in a short time. In this case, as in all others which I have witnessed, a very large amount of serum was poured out during the first three days, after which the discharge was greatly lessened, becoming gelatinous, and eventually purulent.

Had this patient been operated on by injection, the result must have been suppuration, if not mortification;—convulsions might have supervened before either of these terminations, which would have closed the sufferings of the patient by death in a most horrible form. The following case will serve to confirm this opinion.

J. B. of Guernsey county, Ohio, called on me sometime during the year 1839, and said that he had a hydrocele of some years standing, and that he had been operated upon twice, once by puncture and once by seton, without having obtained any relief. He stated that the seton gave him much pain, and that it had been withdrawn too soon. This relation made me suspect a peculiarity of constitution which would need much caution, in case of an operation, to prevent violent inflammation. I told him I could cure him if he would submit to an operation, to which he assented; and I accordingly operated by making an incision, about two and a half inches long. A few ounces of water were discharged, and the wound was dressed by laying in it a strip of muslin, and drawing the lips together with adhesive plaster. I now ordered fomentations to be occasionally applied, and the patient was directed to live on bread and water, or on bread and weak tea. These directions were disregarded, the patient stating that he had no suffering, and therefore needed neither fomentations nor starvation. About the end of the second day, I became anxious that the patient should take a cathartic and be bled, as there were symptoms of approaching fever:

but I was again disappointed by his obstinacy. No untoward symptoms, however, took place until about the end of the third day. The discharge had now become small in quantity and gluey, and the parts were more swollen, and sore to the touch. General fever now existed, with some restlessness; this condition continued for a short time, when convulsions of the muscles of the extremities came on, and were for a few minutes very severe. I soon arrived, however, and immediately withdrew all the dressings, applied fomentations to the scrotum, and bled the patient largely. The cramps subsided in a few moments, and no further untoward symptoms took place; but contrary to my expectations no suppuration followed within the sac. The external wound healed very soon, and it was hoped that an obliteration of the sac had been produced; this hope, however, was not realized, for a very slow accumulation of fluid took place soon after the healing of the wound.

I told my patient that I could still cure him, if he would follow my directions after another operation; and that if he submitted to an operation by any other physician, the whole nature of his case should be fairly stated, together with the true cause of the failure of the operation by myself.

Sometime in March, 1841, this man submitted to another operation, which was performed by injection. Unfavorable symptoms very soon developed themselves, and it was thought that part of the injection had been thrown into the cellular membrane. However this may have been, I know not, but the patient had violent inflammation, with, I believe, loss of sensation of the side of the body on which the hydrocele was situated; likewise, delirium, cramps, and mortification of the scrotum, which soon closed his sufferings. Now I was of the opinion before the unhappy fate of this individual occurred, that if he should ever be operated upon by injection, a fatal result would follow, whether the cellular tissue were injected or not. The extremely irritable nature of the patient's constitution led me to this conclusion.

About the year 1825, the late Dr. Dickson, of Steubenville,

Ohio, operated on a gentleman for hydrocele by injection. Much pain was experienced at the time, but the patient recovered in a short period from all painful symptoms; it was found, however, that the operation had not succeeded. This gentleman visited Steubenville during the winter of 1825-26, for the purpose of being again operated on by a professional gentleman of that place; but it was discovered that adhesion had taken place immediately around the point where the trocar had entered, in consequence of which, the water had accumulated in such a way that the testicle was pushed downwards, so that the accumulation seemed to be mostly above that organ. This circumstance led to the conclusion, that the trocar could not be inserted into the sac without danger to the cord, and that a larger accumulation must be allowed to take place, before a second operation could be safely performed.

In May, 1826, I was consulted by this gentleman as to the probabilities of relief by a second operation. I advised the operation by incision, which he agreed to, and I operated as in the preceding cases. The patient was directed to live on bread and water, and to use occasionally fomentations and thin poultices to the wound for some days; after which the sore was dressed with simple cerate. A perfect recovery took place in a short time, with a radical cure of the disease.

In the foregoing observations, it has been no part of my purpose to go into a general description of the different operations that have been proposed for the relief of hydrocele; but only so far as experience has taught, to give my *objections* to the operation by *injection*, and in favor of that by *incision*.

ART. IV.—*Cases of Fracture and Dislocation*, reported to the Medical Society of Tennessee, in May, 1841. By FELIX ROBERTSON, M. D., of Nashville, Tenn.

Case 1st. Dislocation of the Neck.—Many years ago, I was called ten miles into the country to see James Stuart, an Irishman, beyond the middle term of life. I reached the house where he lay about sunrise, and learnt that about sunset, the evening before, in attempting to mount his horse, while in a state of intoxication, he had gone over the animal and fallen, head foremost, on the ground. The fall occurred on quite a steep hill side, and he fell down the hill. Two or three men were in company with him, and were much amused to see him throw such a somerset, but, although he remained perfectly motionless, did not go to him for some minutes. When one did so, and attempted to raise him up, the man was found to be apparently dead. He was immediately laid on his back and straightened out, when it was soon discovered that he breathed, and he continued gradually to recover until he was able to speak in a whisper; but from his head down, it was ascertained that he was completely paralysed, and that all sensibility was gone.

When I saw him, in the morning, he complained of nothing, could converse in a whisper with his usual intelligence, but pins thrust into any part of his body or limbs gave not the slightest pain, and all muscular motion was impracticable. Conceiving that a partial dislocation of some of the cervical vertebræ existed, and that the case justified a resort to the most vigorous remedies, I placed a man at each of his legs, and after passing a saddle girt under his chin and secured it so that it could not slip off, gave the ends to two other assistants. After several trials, in which I began at last seriously to fear that his head would be severed from his body, I had the satisfaction to succeed in reducing the dislocation. The parts returned to their proper situation with a snap, that was

distinctly heard by all persons around, leaving no room to doubt, that a dislocation had existed.

In a few minutes, after the reduction, the patient complained of a singular sensation of heat in all parts of his body, such as he would feel if standing near the fire; but still, for a number of days, he was insensible to the prick of a pin. Sensibility did, however, very gradually return, until it acquired nearly its natural tone, and with it, the power of muscular motion; but the latter function was established much more slowly than the former.

I saw him some months after the accident, when he was in the following condition: general health good, except constipation of the bowels, which had persisted since the time of his fall; he was able to sit on his chair, and to move his arms and legs, but was not able to walk, or to use his knife and fork. He was sanguine about a complete recovery.

Three months subsequently he was attacked with bilious colic, and failing, as he lived far in the country, to procure medical aid, he sunk under the disease on the second day of the attack. No post mortem examination was made, which is much to be regretted, since it might have disclosed the extent of the local injury that had been sustained in the fall.

Case 2nd. Compound Fracture of the Arm at the Elbow Joint.—A messenger came to me from Mrs. A.'s, four miles in the country, with a request that I would meet my partner, Dr. Waters, taking with me my instruments for amputating the arm. I learnt from the messenger that the son of Mrs. A. had fallen from a tree, and had broken his arm so badly, that Dr. Waters deemed an amputation necessary. On examining the arm of the lad, aged 8 or 9 years, I found that the humerus had been thrown forward, breaking up all the soft parts in front, and passing entirely through, so as to be exposed, to the extent of several inches. In its violent passage, in fact, it seemed to have nearly cut off the arm, and the soft parts closing behind it, there appeared but little prospect of our being able to restore it to its proper position.

It was determined, however, to attempt to save the limb,

and accordingly the ivory handle of a scalpel was passed into the wound, on each side of the bone, which acted as smooth surfaces on which the bone might slide, and at the same time the sides of the wound were pressed asunder. By this method the fractured bone was returned to its place, and it was surprising to see what a change was thus effected in the appearance of the wound, which, now, closing over the bone left but little resemblance of what it had been a few minutes before. The proper inclination was given to the arm, and that position secured by a bandage. A speedy recovery followed, of all but the use of the elbow joint. Except this inevitable anchylosis, the arm was restored to perfect usefulness.

This case is reported to the Society rather on account of its rare occurrence, than from any idea that it presented any thing novel or peculiar.

Nashville, May 3, 1841.

ART. V.—*A Case of Hydrocele*, reported to the Medical Society of Tennessee at its meeting in May. By FERDINAND STITH, M. D., of Franklin, Tenn.

A young gentleman from the country, aged about 25 years, of fair skin, light hair, and blue eyes, called on me, on the 17th of March, 1836, to have himself relieved of a disease of the testis. On examination, I found him the subject of hydrocele, of two or three years standing. I explained to him the nature of his case, and gave him to understand what sort of an operation he would have to submit to, and how long he would probably be confined.

He concluded to undergo the operation at once, and accordingly took lodgings in town for that purpose. He manifested great solicitude to keep the nature of his disease secret, and desired me, if I could, to dispense with the aid of an assistant, to which I readily consented; and having made the necessary

reparations, I repaired to his room for the purpose of operating.

Having placed him in a favorable position on the edge of the bed, and making myself acquainted with the position of the testis, I laid open the sac with my scalpel to the extent of an inch and a half. So soon as the encysted fluid, amounting to about a pint, had escaped, I introduced my finger into the tunica vaginalis testis, for the purpose of bringing its surface, and the surface of the testis, into view, in order that I might the more correctly judge of the condition of the parts. I found the surface generally presenting a normal appearance, all but a portion directly over the testis, on which there was a slight roughness to the touch, the sensibility of which was so exquisite, with the excessive nervousness of the patient, that when I attempted to introduce a fold of the softest lint, I found him falling into syncope, and was compelled to desist.

After giving him some stimuli and waiting a few minutes, I made a second attempt to introduce a fold of lint, made still less irritating by covering it with simple cerate. This time I succeeded partially, but the operation gave him great pain. I passed a small strip of lint above the testis, in the direction of the spermatic cord. I had made up my mind to effect a radical cure, and had so promised my patient; but at this stage of the business I began to feel in some doubt as to the best mode of proceeding. I was afraid of the effects of stimulating injections on a surface that would not bear the slightest touch, but could not think of suffering the incision to heal without obliterating the cavity of the sac. And it now occurred to me, that the least irritating article that could be devised, would be a piece of the softest kid skin, such as I use for animal ligatures, saturated with the mucilage of gum arabic and white sugar. This I succeeded in introducing with a probe, without giving the slightest pain.

The strips of lint and of kid skin having now been introduced, in different directions, I proceeded to close the wound, leaving the ends of the strips slightly projecting from its lips, and applied a suspensory bandage.

In the course of two or three days the adhesive inflammation was fully established—indeed, was something more than I had desired, and I had to bleed him once, and give him two or three gentle purgatives. In the course of thirty-six or forty-eight hours from the time of the operation, the kid skin had become fixed in its position by the adhesive inflammation, and on the sixth day the projecting extremities dropped off, that portion of the sac in which it lay having contracted and firmly united. While this was the case with one portion of the sac, that which was occupied by the lint had not suppurated sufficiently to allow me to withdraw it, until the ninth day.

On the twelfth day, all the external openings had closed, and I put the patient on the use of camphorated mercurial ointment to hasten the reduction of the parts to their natural condition. He was now able to leave his room, had begun to walk about town, and after a few days more, returned in good health to the country. He has never been threatened with a return of the symptoms, and is now, as he has been at all times since he recovered from the operation, in the enjoyment of fine health.

My object in reporting this case to the Society is two-fold; first, to direct the attention of surgeons to the use of the kid skin in such cases, as giving less pain, and being more likely to answer every indication than any agent hitherto employed;—and, secondly, to suggest the idea of attempting the radical cure of hernia, by, in the first place, reducing it, then opening the sac, and, lastly, introducing the kid skin. Of course, for some days, the patient, after such an operation, would be obliged to maintain the horizontal posture, to use compresses so adjusted as to prevent the intestine from falling into the passage, and to keep the parts in a state of absolute rest. The union, in my opinion, would be effected in forty-eight hours; and if the patient were in a favorable state for the operation, and received judicious treatment afterwards, I should not apprehend any danger of an extension of the inflammation beyond the limits of the enclosed kid skin.

Nashville, May 3, 1841.

ART. VI.—*Operation for Imperforate Vagina.* By JOHN TRAVIS, M. D., of Carroll county, Tenn.

On the 13th day of May I was called to visit Miss Smith, a young lady of this county, aged 16 years. I found her laboring under severe pain of the hips, a sense of heaviness and tension in the uterus, and hardness of the abdomen. On enquiry of her parents, I learned that she had never menstruated, and that she had been under medical treatment for about two years, generally taking emmenagogue medicines. This treatment, instead of affording any relief, only increased the intensity of the pain. By consent of her parents, I made an examination per vaginam, and ascertained that there was no opening for the escape of the menstrual fluid.

I then performed the operation according to the plan of Cooper, by making an incision, more than an inch in length, just below the *meatus urinarius* downward. There was an immediate escape of three pints of *black blood*. The girl was at once relieved of pain, and in a few minutes left her bed and said she was well, and has continued to attend to her ordinary business without taking her bed.

There is danger in delaying this operation. When the blood accumulates in such quantities that the vagina cannot contain it, the uterus becomes distended, and the fluid may escape through the Fallopian tubes and be extravasated in the abdomen.

There can be no question that this operation will prolong the life of the patient on whom it was performed. The hymen was unusually thick and strong, so much so, that the malformation could not have been removed by the *vis medicatrix naturæ*.

June 3, 1841.

REVIEWS.

Traite des Maladies Ventenses, ou Lettres sur les Causes et les Effets de la Presence des Gaz ou vents dans les voies Gastriques, et sur les Moyens de Guerin ou de Soulager ces Maladies ; par M. P. Baumes, *Chirurgien en chef de l'Hospice de L'Antiquaille de Lyon, &c. &c.*

A Treatise on Gaseous Diseases, or Letters upon the Causes and Effects of the presence of gases or wind in the Alimentary Canal, and upon the means of curing or relieving these diseases; by M. P. Baumes. Small 8vo. pp. 223. Paris. Lyons, and Montpelier. 1837.

The formation of gases or wind in the human body, regarded either as a physiological or pathological phenomenon, has attracted but little attention from physicians, foreign or American. In our standard works of physiology the function of gasification is not considered, and in the most popular Treatise of Pathology and Morbid Anatomy of this day, (Andral) the whole subject is despatched in a very few lines, in a manner altogether unsatisfactory.

The monograph before us supplies, therefore, a want which we doubt not has often been felt; and as the author was himself the subject of a very troublesome gaseous affection, and as he has devoted much of his time to the investigation of the subject, in a manner truly practical and experimental, many new and valuable facts have been given to the profession as the result of his labors.

We propose giving to the reader the leading facts and principles, laid down in this treatise, touching the pathology and treatment of these affections. The work consists of twelve letters in which the author considers successively, in a plain and easy style, the various topics embraced in the investigation. After giving an historical summary of all preceding works on the subject, (the substance of which is, that, altho' Hippocrates had said something of gases, although Van Helmont had touched upon them, and, of late, although some few distinguished pathologists had made gasification a subject of study, little or nothing has been said or done to afford any positive knowledge of the matter,) the author proceeds to lay down the various propositions and conclusions which the work contains.

"The gases in the alimentary canal arise from different causes. Sometimes it is the atmospheric air which has entered by the movements of deglutition—of respiration, or the atmospheric air which other gases contain always in greater or less quantity in the food. At other times they are the result of an operation of a chemico-vital nature, like that which constitutes digestion; but above all, whilst there is imperfect digestion, or complete indigestion. They seem to arise again by general belief, at the commencement of decomposition of some materials which have remained for too long a time in the intestinal canal; but you will know better hereafter what estimate to place upon this opinion. The kind of putrefaction—of decomposition, which gangrene exhibits, like one sees in a case of strangulated hernia, occasions, in the same way, their generation."

"With the exception of these cases, their production is owing to a *vital action*, a genuine exhalation which may occur in a state of health, but which more frequently is the result of a state of excitement—irritation of the alimentary canal, and oftentimes, to appearance, of atony. In the same manner as a bloody, mucous, serous, or purulent discharge exists, so does a gaseous discharge exist; and the development of gas constitutes one of those drains by which nature reacts against divers excitements, in obedience to the principle established by Hippocrates, "*ubi stimulus, ibi fluxus.*"

As resolution, suppuration, ulceration, &c. are regarded as

terminations of inflammation, so also may the production of gas; which phenomenon may be designated by the term *flatusation*. It is regarded by our author as a favorable symptom when inflammation is accompanied with abundant gaseous products, inasmuch as they are a method of disengorgement, "a favorable way which prevents Nature from committing herself to other morbid works more or less dangerous—a way which one might be happy to obtain, but which is as difficult to obtain as a hemorrhage by the exhalents." On the contrary, when, during the existence of inflammation, there has been an abundant development of gas, and then a sudden suppression, every danger is to be apprehended. We know the danger arising from the suppression of an habitual discharge —of an eruption upon the skin—of a copious perspiration during fever—of the discharge from a blistered surface, while yet there is intense inflammatory action going on in the internal organ on which the blister has been applied. Now in inflammation of any hollow organ, or an organ having an excretory duct, if there seems to be a termination by flatusation, and while this favorable discharge is going on, a sudden suppression should occur, as a matter of course, the inflammation would become more intense; and it becomes the physician here to direct his remedies in such a manner as to re-establish the gaseous discharge.

The phenomena of the formation and disappearance of gases, therefore, become important means of diagnosis and prognosis.

"The effect of gases in the alimentary canal are extremely varied. They often frighten by the serious symptoms they afford, and have more than once led experienced practitioners into error. Sometimes, without finding issue by the mouth or anus, they are absorbed rapidly, or more or less slowly; sometimes by the lymphatic system and disappear with the lymph—then again by the venous system, * * * * * and they seem, while combined with the blood, to resume their elastic form—to dilate and compress organs, to clog and arrest the circulation, to produce formidable accidents in the heart and brain, and death itself."

Thus much for a brief summary of the causes and effects of gaseous discharges. The author next adverts, in the same brief manner, to the treatment.

"The treatment of gaseous discharges in the alimentary canal may be *vital*, *chemical*, or *mechanical:* VITAL, when one desires to modify the organism—the same vital action which generated the gases; or to effect their expulsion by acting upon the contractility of the gastro-intestinal tube: CHEMICAL, when substances are introduced into the alimentary canal which operate by combining themselves with the gases, absorbing them, or causing them in part to disappear: MECHANICAL, when one wishes to extract them either by the mouth or, particularly, by the anus, or even by any part of the abdominal parietes by means of a surgical operation."

After this brief summary, the author discusses, at length, the three topics which have been glanced at, viz. the *causes*, *effects*, and *treatment* of gaseous discharges.

I. *Causes of the presence of gas or wind in the alimentary canal.*

The author alludes to the fact that infants have been born with a large quantity of gas in the alimentary canal, and shows that they cannot be attributed to any thing else than to a particular condition of the mucous membrane, for the idea of decomposition is out of the question.

Gaseous exhalation is a physiological, or pathological phenomenon.

1st. "With regard to gaseous exhalation in a natural state among plants, as well as among animals, the facts are numerous and well known every where. Who is ignorant of the phenomena of gaseous exhalation and absorption of leaves and of other parts of vegetables? And as to animals, does not the phenomenon of the swimming bladder of fishes, which forms itself during the act of respiration, and the exercise of the functions of the cutaneous system, render this exhalation evident? As to the digestive tube, in a state of health, particularly in certain persons endowed with a particular disposition, there is in it also, regularly, without doubt, exhalation and absorption of gas. If by a convenient opening made in the belly

of an animal, one can draw out a small portion of the intestinal tube not containing any matter, then include it between two ligatures, the intestine thus tied, if allowed to remain in the abdomen, in a short time will, in the portion included between the ligatures, be distended with gas, while other parts of the mucous membrane will appear perfectly healthy."

"The phenomenon of gaseous exhalation in a state of health in the alimentary canal, has been very well noticed by Bernard Gaspard, (Dissertation, 1812.) This author has displayed a great deal of sagacity in the following passage, which seems to support strongly my method of considering gases in a morbid state:

"'It is said that a quantity of gas disengages itself constantly in the intestinal canal of man and animals, particularly during digestion. This gaseous exhalation occurs in persons of good health, but especially in those who are nervous, bilious, melancholic, and naturally windy; also in old age, in nervous, hypochondriac, hysterical, and chlorotic affections, &c.; or it creates the borborygmi and the rumbling noises incident to diseases. These gases are not fœtid; they are particularly azotic, going off by the anus with explosion; or others do not discharge themselves, and are, without doubt, re-absorbed. It seems, also, that they are especially exhaled in great quantity by a kind of option, at the time of the disappearance of emphysema, or during a lesion of the functions of the skin, of the cooling of the feet, &c. But the fact which best establishes the real vital exhalation of these flatuosities is, that they are susceptible of being modified in their quantity, their odour and nature, by divers cutaneous and pulmonary absorptions. Thus the winds which are produced in dissecting a cadaver are cadaveric, according to Bichat; those which are produced by breathing the odour of pus, or in remaining near large ulcers, are like purulent matter. The rubbing of sulphur seems to create a sulphurous odour.'"

As a pathological phenomenon, the author adduces several reasons to sustain the position that gaseous exhalation—or rather gastro-intestinal gases, result from a "state of excitation, irritation, or inflammation itself."

The following argument appears to be as satisfactory as any which he has offered.

"That which proves that Nature proceeds in the exhalation

of gases as in all other exhalations, and that they are so many modes of action, so many different products of the same morbid phenomenon is, that all these exhalations often alternate one with another; succeeding each other, replacing one another, so that the augmentation or appearance of one induces the diminution or disappearance of another. A number of facts prove this." * * * * "The gaseous exhalation which supplies the place of other exhalations or secretions may occur in other organs at the same time that it exists in the alimentary canal. The diminution or suppression of urine, of sweat, of fœces, of the menses, of the lochia, of leucorrhea, of habitual epistaxis, of ptyalism, etc., have given rise to the development of gas in the alimentary canal, in the other cavities lined with mucous or serous membranes, in the cellular tissue, &c. &c."

The following cases among many others recorded, serve to illustrate the position taken by the author.

"M. Pau, a wine merchant, who resided at Guillotiere, came one day with his wife to consult me. The night previous they had suffered, the husband, with a considerable diarrhœa, nausea, excessive pains and cramps: the wife, with a violent colic accompanied with an eruption, above and below, of a prodigious quantity of wind, although she had never before been flatulent. All these symptoms ceased in the morning; but the same thing happened to them five days afterwards, and in the interval they were perfectly well. It was evident that the same cause, or a similar cause, appeared to have acted the second time, in the days of interval, to produce the same morbid phenomena. I convinced myself, by questioning them, that it could not be charged to an error in regimen, nor to the quality of food or drinks, nor to a strong moral emotion, nor fatigue, nor, in a word, to any one of the causes which more ordinarily produce similar phenomena; but I understood that the two evenings which preceded the two nights of sickness, they had gone to make up a party of pleasure at the room of a painter, where a strong odour of varnish was diffused at the time of their visit. I directed their attention to this circumstance, and they immediately remembered that when leaving the painter's they commenced to feel nausea, dryness of the mouth, and a general malaise. It seemed easy to me to understand from them that the true cause of their complaint was the vapour of varnish acting up-

on the alimentary canal. Having ceased visiting the painter's room the accident did not recur. Here it is evident that the same irritating cause produced, (according to the particular disposition of each individual,) in the digestive tube of one a mucous or sero-mucous discharge, and in the other a discharge entirely gaseous."

The following fact is worthy of notice:

"When inflammation attacks the gastro-intestinal mucous membrane in an individual disposed to gaseous exhalation, it is by this exhalation that nature manifests the commencement of the attack. *If inflammation acquires, suddenly or gradually, a very high intensity, no gaseous exhalation will occur where it is more intense, but may continue in those parts of the mucous membrane less inflamed, or less irritated.*

This comports with the well established pathological law, that the secretory stage of inflammatory action in any tissue of the body, is less active than the preceding congestive stage. For example, the burning and throbbing of a boil is relieved in a great degree so soon as suppuration commences. Irritation of the bowels as well as inflammation diminish, and indeed often become entirely relieved upon the occurrence of diarrhœa. The dropsies are all considered referable to a subacute inflammatory state, etc. etc. Now the principle which obtains in the secretion and exhalation of serum, mucus or pus, obtains also in the secretion and exhalation of gas.

Such is the substance of the author's views concerning the causes of the presence of gas in the alimentary canal. We come now to his second head,

II. *The effects of the presence of gas or wind in the alimentary canal.*

Among these effects, the principal will be found in the following list.

1. Enormous dilatation of the digestive tube.
2. Violent colic.

3. Compression of neighboring organs, resulting in disordered function, etc.

4. Absorption of gases by the lacteals and venous radicles; their passage into the circulation, producing,

5. Accidents in the brain, heart, &c. apoplxy, syncope, etc.

General dilatation of the digestive tube constitutes one form of tympanitis; the other form results either from a gaseous secretion from the peritoneum, or the escape of air from the bowels, by a perforation, into the cavity of this membrane. We believe the first form of the disease is the more common.

The writer of this review reported a case in the Western Journal Med. and Phys. Sciences, Vol. No. in which, after several days continuance of inflammation of the bowels, during which time the patient partook of no nourishment, save gum water, tympanitis took place, and so enormous was the distension, and so ineffectual were all remedies addressed to the disease, that it was decided upon, as a last resort, to introduce the trocar. This was done, and a great amount of wind escaped, but the operation was unavailing. The patient died, and a post mortem examination disclosed what was anticipated—an obstruction (consisting of a scirrhous growth) above the sigmoid flexure of the colon, which prevented the egress of wind, and, in its turn, aggravated, by its detention in the bowels, the inflammation which, without doubt, produced it. Now if from any cause, such as the one we have mentioned, spasmodic constriction, pressure of other abdominal organs, an enlargement of a mesenteric gland, a tumour, or intussusception of the bowels themselves, gas should be prevented from passing off, dilatation will not only result, but the gas acting as foreign matter will serve to increase the inflammation, just as retained pus or mucus; so that in all cases of tympanitis it is important to know, if possible, if there be any obstacle to the exit of gas, in order that we may form a proper diagnosis.

But it not unfrequently happens that retained gas, instead

of acting upon the mucous lining of the stomach and bowels, exerts itself, as do many foreign matters, upon the muscular coat. Hence *Colic.*

In the third place, we are to notice the compression exerted upon neighboring organs, and the consequent derangements of function.

"In distending the rectum they press upon the bladder, prevent its dilatation, and cause frequent discharges of urine; or if the pressure be exerted near the neck of this organ, the result, on the contrary, is a retention of urine."

Here is an apparently very simple cause of two forms of urinary disease, which sometimes become very alarming—a cause which, we believe, few are apt to think of—a cause which is apt to exist very often; and we doubt not but that many a patient has been subjected to torture by fomentations, diluents, astringents, &c. &c., when, perhaps, the introduction of a rectum bougie would put an end to his sufferings.

"In distending the colon, or small intestine, they are apt to rise up in the stomach and occasion vomiting. Accumulated in the entire length of the intestinal tube, they press upon the diaphragm and hinder the respiration."

The abdominal viscera may likewise be displaced, or even lacerated, and otherwise injured by the mechanical pressure of gas in the bowels. The bowels themselves are particularly liable to eruption when so distended. Cases illustrating these effects are given by the author.

Local accumulations of gas simulate sometimes other diseases, and physicians are liable to errors in diagnosis. They have been mistaken for wens, abscesses, and aneurisms, being circumscribed and quite hard. Hence the importance of examining with care all signs and symptoms.

Gaseous accumulations in the alimentary canal, particularly if accompanied by gaseous secretion in other parts of the body,

render the body specifically lighter than water, and effectually prevent it from sinking in this fluid.

The following short case, quoted by the author from Morgagni, illustrates the absorption of gas:

"A fisherman of Venice, at the close of his fortieth year, having a hernia, and being subject to windy diseases of the abdomen, was taken suddenly in his boat, and died on the spot."

An examination of the body, made by Morgagni and Santorini, showed that the abdomen was swelled by air, which distended the stomach and intestines. These organs were very red, and inflamed, and presented, also, a gangrenous colour near the hernia. All the veins of the abdominal organs were filled with air, and there was not a single vein in the whole body which was not distended by a black and frothy blood. This circumstance was particularly witnessed in the cavity of the cranium, in the sinuses and vessels of the dura mater—of the pia mater, either at the base of the brain, or rest of the surface, or in the ventricles. * * * * * *

In circulating with the blood, gases may give rise to distensions, temporary compression of various organs, obstructions in the circulation, excessive pain, palpitations, chills, vertigo, &c. &c. "They may also vitiate the blood and unfit it for nutrition."

Gases may resume their elastic form after having been absorbed and carried into the circulation. This may happen, either in the intestinal canal, or in the various cavities and organs of the body. In the former event, they may either be discharged by the anus, or give rise to the various lesions already noticed; in the latter, they may not only exert a deleterious influence by compression, but by acting as foreign matter, impair the sensibility of organs, interfering with the functions of nutrition and secretion, and possibly interrupting the latter function by a hidden process of vital chemistry, and lastly, by giving rise to the formation of morbid products.

After occupying four letters in further discussing the pathology of gaseous exhalation, and defining his views of irritation and inflammation, and the relation of these to the former phenomenon, together with some remarks upon diagnosis and prognosis, which, in substance, have already been stated, the author comes to consider,

III. The Treatment. This may be *Medical, Chemical, or Surgical.*

MEDICAL TREATMENT.

"1st. *Bloodletting.* When there is sanguineous plethora, experience shows that Nature chooses to unload herself of the superabundance of blood, which fatigues her, by discharges of every kind, and principally by a gaseous discharge in the digestive tube. It is this which appears often in women at a critical period, who become windy, and who were not so previously, and who cease to be so after a bleeding. If sanguineous plethora be general, the bleeding should be general. If the plethora is abdominal only, bleeding at the anus would be better, particularly if there be any hemorrhoidal disposition. The hemorrhoidal discharge, when it appears, causes the gaseous discharge to disappear."

In cases of local irritation, pain in a particular part of the abdomen, increased at the moment of desire to expel wind, &c., a few leeches may be applied immediately over the painful part, and their application renewed, from time to time, as circumstances may seem to require. Oily embrocations, fomentations, and cataplasms, are also useful.

"2nd. *Tonics.* When by a defective innervation, arising from an abuse of debilitating regimen, or the action of any debilitating cause whatever; when by a state of relaxation of the mucous tissue, there is a feeble and insufficient action of the digestive fluids in the process of digestion, tonics are proper. I advise the use of camomile tea, tea of bitter orange peel, gentian root, &c."

"3rd. *Stimulants.* These may be employed, when one

wishes to impart a strong and immediate action to the muscular coat for the expulsion of gases. It is thus that the infusions of mint, coriander, canella, anise, sage, &c., various elixers, &c. prove useful; but in general these substances are injurious."

"4th. *Narcotics* may be very useful when, in persons of very irritable stomachs and bowels, the distention of one coat accompanies the constriction of another, as in cases of colic, cramp, &c. In these cases, I am accustomed to soothe the pain momentarily, without effecting the expulsion of any wind, with a quantity of syrup of poppies, dissolved in lettuce or orange water. * * * * * Embrocations with oil of morphine, or poppy; fomentations, well saturated with a decoction of henbane, poppy heads, &c., are useful in such cases. I am often successful with light friction, upon the parts which seem to correspond to a spasmodic constriction, with a pommade composed of equal parts of belladonna and Galieus cerate. The application of the leaves of belladonna produces, in some instances, the same result. It seems that this plant acts upon the constricted part of the intestine as it does upon the iris, or upon an orifice, the edges of which are spasmodically clasped."

"5th. *Diuretics and Diaphoretics* offer no other advantage than to direct the current of the circulation to important organs, which act as emunctories of the system, and possibly to substitute one discharge for another. But in general they are hurtful, because they are more or less stimulating to the intestines; moreover, the propriety of their administration demands, on the part of the physician, considerations which are applicable only to the particular case under notice."

"6th. *Emetics* are not admissible, except when the stomach contains a large quantity of food, or some indigestible aliment, or irritating substance, calculated to excite the mucous membrane to gaseous exhalation."

"7th. *Purgatives* are, in general, very injurious. I advise that windy persons should purge themselves as little as possible."

"8th. *Antispasmodics.* These remedies are useful when they destroy the great susceptibility, or irritability of the mucous membrane, or whenever they overcome the nervous erethism occasioned by the great distension of the mucous membrane, which the winds have occasioned by their elasticity and accumulation. Such are asafœtida, valerian, ether, musk, &c. &c."

"9th. *Topical Revulsives.* When the winds arise from inflammation, these topical medicines placed upon the limbs, but especially opposite the parts of the digestive tube diseased, produce, sometimes, excellent effect: such as sinapisms, vesicatories, &c. Cups also seem to be very useful in most cases."

CHEMICAL TREATMENT.

The author expresses the opinion, founded upon observation, that no substance exists which is capable of absorbing the gases exhaled in the alimentary canal, without proving injurious itself as an irritant. Magnesia, which many suppose acts as an absorbent, he thinks, exerts its beneficial effect by virtue of its laxative power, converting the gaseous into a liquid discharge.

"A sound theory of the formation of gases, and the correct appreciation of the generality of facts, which practical medicine affords, seems, in general, to reject these means (absorbants) as never remedying the cause, and as never having any other than an inefficient action upon the effect."

SURGICAL OR MECHANICAL TREATMENT.

"Winds may be drawn out of the alimentary canal by means of a canula or sound, to the extremity of which a syrynge or sucking pump is adapted. This procedure is easier in its application to the anus and rectum, than to the œsophagus and stomach. I have employed this means (in its application to the rectum) with success in several persons; and I have occasionally received some benefit by it myself. It is sufficient, sometimes, to introduce a gumelastic tube to the depth of several inches, in order to give vent to the wind, without any resort to pumping or sucking."

It is difficult, however, to arrive at gases in the small intestine, and not unfrequently spasmodic constrictions and feculent matter in the large intestine, prevent, almost altogether, the passage of gas, notwithstanding the use of a pump.

Paracentesis is proposed as a dernier resort.

"Finally, it is proposed, in these desperate cases, to puncture simultaneously, with a small trocar, the parietes of the abdomen and the walls of the intestinal tube at the point most distended."

A few remarks upon diet and regimen, drawn from Fodere, together with the repetition of what has been laid down as a palliative treatment, in cases requiring immediate relief, (the administration of sedatives and antispasmodics, and the external application of opiates and counter-irritants,) close the work.

We have thus endeavored to present a condensed abstract of this valuable little treatise. We know that we have profited by its perusal, and if the review here offered to our professional brethren, shall lead to the investigation of a much neglected part of pathology, our object will be fully accomplished.

W. J. B.

Selections from American and Foreign Journals.

Operations for the Cure of Stammering.—Our last files of foreign journals are filled with animated discussions, and reports of the transactions of medical societies, in relation to the several new operations proposed for the cure of stammering. The operations are those of Yearsley, Lucas, and Dieffenbach: each founded upon a different principle; and yet each professing to accomplish a cure in the majority of cases. Mr. Yearsley gives the following account of the manner in which he was led to the discovery of the operation which he recommends:

"In the practice of my department of the profession, it has been usual with me to explore the condition of the mouth and pharynx in every case of deafness committed to my care. I have thus discovered that a large number of patients suffering from deafness, are affected with enlargement of the tonsils and uvula, and an irritable condition of their investing membrane and the pharynx generally. It has been my constant practice, when I have considered these states at all contributing to the imperfection in hearing, to remove either the tonsils or the uvula, or portions of both, according to the nature of the case, with the most marked and immediate benefit, as far as the hearing may have been concerned. In December last it occurred to me to operate in this manner on two patients. They were, at the time of treatment, so deaf, that I did not then address my questions particularly to them, but to their parents, so that I was unaware of any impediment to speech in these instances. Some time after, as the cure of deafness advanced, I learned from the parents that both children had been stammerers from infancy, and, as much to my surprise as gratification, that the cure of stammering had ensued immediately on the excision of the tonsils. At the time

at which I write, the subjects of both these cases remain free from any impediment, though their stammering previously to the operation is represented to me as having been very decided. I had before this remarked that persons with enlarged tonsils were affected with thick and imperfect speech, for which I had often, during the last year, practised excision with the happiest effect, in restoring the voice to its original clearness. Since the cases above mentioned, I have operated on upwards of forty persons, all of whom have immediately felt themselves relieved of their impediment. Many have seemed wild with joy, or have shed tears of pleasure, at the instantaneous restoration they have enjoyed. After the operation, the difficulty of speech which remains is referred by the patient to the lips; they express themselves entirely free from the original difficulty. Something must be allowed for the long misuse of the organ of voice, and the existence of habit, in rendering the voice less perfect than in a natural state. In fact, after their relief, patients have yet to learn the proper use of the vocal apparatus.

"I have performed the operation by means of a scalpel, tenaculum, and scissors, without any serious hæmorrhage, and with a small amount of pain, which has appeared somewhat greater in the case of the uvula than the tonsils.

"In reflecting upon the subject, the explanation I have at present to offer is, that to produce stammering, the dorsum linguæ, the palatine arches, velum palati, and uvula, approximate together so completely, and perhaps irregularly, as to leave no room for the expulsion of air from the larynx. In a person who stammers, no air issues from the mouth during the abortive effort to speak; but it does so as soon as the patient is relieved from this state, so as to produce sound. The most powerful contraction of the abdominal muscles can be seen attempting to force up the diaphragm and expel the air: sometimes all the respiratory muscles, and even those of the body generally, are thrown into violent spasmodic action, as the individual grasps some near object to assist the expulsive effort. In some cases, when there is nothing abnormal about the tonsils or uvula, I find a great congenital narrowing of the entrance from the mouth to the pharynx."

Mr. Yearsly, it appears, has operated upon one hundred and twenty patients, of whom only three were women! the great majority of these were cured, all were more or less relieved—so say Mr. Yearsley's partisans. The London Medical Society, however, openly condems every operation, because "stammering is essentially functional," and the opera-

tions in question "are not based on any scientific basis." While the Westminster Medical Society admitting, what certainly cannot be disputed, that real cures have *occasionally* followed these attempts—particularly those of Mr. Yearsley, which are the most numerous,—starts from this point as a fact, and occupies itself more usefully in endeavoring to trace out the relation between cause and effect. The following is a brief summary of the opinions expressed by some of the distinguished members in reference to the mode of action of the operation, condensed from the Lancet.

"With regard to the extent of the operation, Mr. Yearsley, in most cases, removed the uvula entirely, chiefly with the view of throwing both arches of the palate into one. When the tonsils were so much enlarged as to project beyond the columns of the fauces, the uvula was then partially removed, and also so much of the tonsils as projected; in only one case had any thing like severe hæmorrhage took place, and in this the bleeding continued for four hours. The operation, however, might not be unattended by danger, when there was a diathesis to hæmorrhage present in the system."

Mr. Dowing, who had witnessed several of the operations, and was struck with the fact that three methods so entirely different in their character were all followed in the majority of cases by success, was disposed to consider the effect dependent on the shock to the nervous system, and the loss of blood.

Mr. Alcock also had seen many operations performed by Mr. Yearsley. Some of these were attended with *marvellous improvement*, others with great relief, while others were productive of no benefit—believing that stammering depended on a variety of causes, he could not conceive that Mr. Yearsley's method would be applicable to all cases, but had no doubt that in many it would be followed by a permanent cure.

Mr. Malyn had been present at three operations, all of which were successful, although, only in one instance, did the uvula upon inspection appear unnaturally elongated. Mr. Malyn believes that stammerers experience the greatest difficulty in uttering the labial or dental sounds, because in the effort the velum descends and hangs over the windpipe, thus preventing a sufficient supply of "material for the manufacture of words;" by the operation of Mr. Yearsley this impediment is removed, the supply of material is rendered sufficient and the stammer ceases.

The opinion of Dr. Marshall Hall is more at length and more scientific; we quote it in his own words:

"He observed, that the previous speakers had not, he thought, entered into the true line of argument. Too much had been said about the tumidity of the tonsils, and of the tongue; too little about the functional properties of the organs of articulation. Now, tumidity of the tonsils induced a certain well-known and equally recognisable thickness of the voice; tumidity of the tongue induced a special defect of articulation, but neither of these induced stammering. On the other hand, stammering was excited in a little patient of his whenever the general health was deranged. Dr. Bostock has detailed, in the "Medico-Chirurgical Transactions," a case of stammering cured by the administration of purgative medicines; and, lastly, stammering was excited as a part of chorea. These, and other facts, proved that stammering was not so much an organic as a functional defect; and the question to be agitated that evening was, what relation the excision of the uvula could have with the cure of such a malady. Dr. Hall had been witness to two cases: the first was that of Philip Wyatt; before the operation, which consisted in the removal of the uvula, the patient was asked his name; in vain he attempted to enunciate the Ph; the effort seemed to threaten convulsions; the operation was performed; the same question was put, and the ready reply was, Philip Wyatt! In the second case the good effect, though less complete, was not less obvious. Now, what could be the rationale of this phenomenon? That it could be at all connected with the more or less open state of the air-passages, Dr. Hall regards as most improbable. In many cases there was no enlargement of the tonsils or tongue, no elongation of the uvula, neither was there any want of volume or force of the expired air, when the word was well pronounced, or in the pronunciation of such letters as did not absolutely interrupt the flow of the expired air, as v., s., &c.: nor was there, as Dr. Arnott thought, any obstruction to the flow of air in the larynx itself, as he (Dr. Hall) had shown in a paper published in the "Journal of the Royal Institution," in 1831. The obstruction was offered by the organs, not of the voice, but of the articulation; not of the physical condition of the parts, but of their undue action. In pronouncing the letter b, the mouth was closed by the force on adduction of the lips, the posterior nares being closed by the veil of the palate. Long ago Dr. Hall had described stammering as an undue spinal action; the stammering of chorea proved this. He would now venture to ask, might the situation of the uvula and its peculiar contact with the parts of the posterior nares lead to a reflex spinal action? The act of

vomiting on tickling the fauces was not less marvellous or inscrutable; the uvula in this manner might be the excitor and regulator of speech. Stammering might be induced in cases in which its posterior surface was unduly excitable. In this manner we might explain the effects of Mr. Yearsley's operation; but Dr. Hall begged the society to view his last observation as a conjecture. Elongation of the uvula could have no effect in inducing stammering as supposed, by falling on the tongue; for in the enunciation of many letters, as b, t, v, s, &c., it was raised, with the velum, high up, so as to assist in closing the posterior nares. Time and further investigation were, as Mr. Yearsley was aware, required to mature the investigation, to determine the special cases of stammering to which the operation was adapted. But enough had been done to excite the deepest interest in every liberal mind."

Mr. Robins had witnessed several operations by Mr. Y., attended by such success as would induce him, although he believed stammering to depend on a variety of causes, to recommend to every one afflicted with this defect to submit to the removal of his uvula.

In a word, the conclusions to be drawn from the discussion before the Westminster Medical Society are as before stated. That the operations are occasionally followed by an entire and permanent cure, more frequently are attended by relief—the relief consisting in the removal of the spasm by which the stammer is accompanied, rather than in any benefit to the stammer—while in other cases the operation effects no change.

A question of preference however exists between the operation which we have just noticed and that recommended by Messrs. Lucas and Amusat. This latter consists in a division of the frœnum, and a removal of a portion of the anterior fibres of the genio-hioglossi muscles; the relative advantages of these two methods, and the particular cases to which each is applicale, remain unsettled.

In order to complete the history of this subject as at present before the profession, we have only to introduce the more dangerous and difficult operations devised by Dieffenbach, which we extract in the words of his translator, Mr. Travers.

"The idea lately suggested itself to me," say Dieffenbach, "that an incision carried completely through the root of the tongue might possibly be useful" in stuttering, which had resisted other means of cure, "by producing an alteration in the condition of its nervous influence, allaying the spasm of the chordæ vocales, &c." A most unphilosophical beginning,

truly, and one which speaks strongly of the discipline of the German hospitals, and possibly of the little danger of an inquest on unsuccessful practice. One thing is certain, that an idea so conceived would be regarded as most unwarrantable in its application in the British hospitals. Nor is the case improved, when he explains that the first thought of the operation originated in a patint with strabismus one day requesting to be operated on for that deformity, with a "well-marked stutter." But he continues—"the brilliant success of this new oparation more than realized my most sanguine expectations."

The principle which the professor has in view, is the division of the nervous filaments distributed to the muscular substance of the tongue, under the impression that some undue excitation in these nerves induces the spasmodic movement of the muscles. That this effect may result from the operation is more than probable; but it appears to us that the method of arriving at the end in view is exceedingly clumsy. If mere alteration of the innervation of the muscles of the organ be the object, why not, by a much more simple, incomparably less severe, and less dangerous operation, at once divide the hypoglossal nerve or nerves as they rest on the hyoglossus muscles; an operation requiring a superficial incision of scarcely an inch in length.

The author prescribes three methods of operating. "1. The transverse horizontal division of the root of the tongue. 2. The subcutaneous transverse division, in which the mucous covering of the tongue is left inviolate. 3. The horizontal division with excision of a wedge-shaped portion."

"The first operation I performed on the 7th of January, 1841. I chose for this case the method by which a wedge-shaped portion is removed from the posterior part of the tongue; for, as I have remarked, I felt more confidence in this than in the other methods.

"Frederick Doenau, a highly intelligent and talented boy of thirteen years of age, had stuttered from his earliest childhood, and to so painful an extent, that the defect was thought to be quite incurable. It varied, however, much in degree: when at the worst, he was unable even to produce a sound. He stuttered in Latin and French, as well as in his own language—sometimes one set of words, and sometimes on others. The pronunciation of the sibilant letters (s, z, ss,) and of the palatals hard (g, k, ch, and x,) was attended with particular difficulty; and he made no distinction between the hard sounds, p, t, k, and the soft ones, b, d, g, (German.) He re-

peated the same letter often four times running; and when he whispered, he stuttered as much as when he spoke loud or shouted; often he could either not speak at all, or produced only half articulate sounds. The presence of a stranger invariably affected him in a manner most painful to behold. His face became distorted; the alæ of the nose worked convulsively; his lips moved quiveringly up and down; his eyelids were expanded into a wild and eager stare; the tongue was now stiff, now played convulsively within the mouth; and the muscles of the throat, larynx, and trachea were sympathetically affected. Thus, after terrible efforts, the boy gave utterance to a mangled and imperfect word; now for a time was his speech free, and words chased one another with incredible velocity, till confusion ensued amidst the thronging sounds; and the same painful scene was thus again and again renewed. The peculiar physical horror which constitutes a stutterer, and which is excited by the effort to speak, is very similar to that which gives rise to the excitement and spasm of the hydrophobic patient at the sight of water. This internal movement might, on that account, be called phonophobia.

"The boy's mother caught eagerly at my offer to make an effort to cure him; accordingly, with the assistance of Drs. Holthoff and Hildebrant, the operation was performed as follows: The boy sat with his head leaned against the breast of an assistant; the tongue being protruded as far as possible, was grasped on its anterior half with the forceps of Muzeux, being thus compressed latterly, and drawn forwards by one assistant. The gentleman against whose breast the boy's head rested, retracted the angles of the mouth with a pair of blunt hooks. Grasping now the tongue as near to its root as possible, between the thumb and forefinger of the left hand, I passed the bistoury through it, and divided it completely from below upwards; a strong ligature passed through the posterior edge of the wound, served to fix it temporarily, and prevent too great a strain upon the slender band which alone connected the mass of the tongue to it; the anterior lip of the incision was now grasped, and laterally compressed between the modified hare-lip forceps, and a wedge-shaped slice excised out of the whole thickness of the tongue. It will be found more convenient to make this second incision from above downward, and with a small straight knife. The posterior edge of the wound was now, by means of the beforementioned ligature, and a sharp double hook, drawn so far forwards that the needles with the ligatures could be conveniently passed through it; six strong sutures served to bring

the edges of the wound together, and to restrain the hemorrhage. To effect the latter object, they must include the whole depth of the wound within their loop. That the hæmorrhage was considerable, may be imagined from the nature of the operation, which should not be attempted by all persons indiscriminately. As soon as the boy's mouth was washed out, I desired him to pronounce some of those words which he had before found especially difficult; he did so without stuttering or hesitation. This distortion of the face, however, continued; the patient was put to bed, and a cooling plan of treatment ordered. With the exception of a slight sympathetic febrile disturbance, the swelling of the tongue, that one might anticipate, and the consequent impeded deglutition, nothing remains to be noticed, so far as regards his recovery from the operation itself. His features, and his mouth especially, were still much distorted when he spoke, but the stutter had entirely ceased. On the fifth day I removed three of the sutures; during the next twenty-four hours the swelling of the tongue had visibly decreased, and I then removed the three remaining sutures. On the seventh day the wound was completely healed, the back part of the tongue alone was very inconsiderably swelled, and the boy quite re-established. At this present time, not the slightest trace of stuttering remains, not the slightest vibration of the muscles of the face, not the most inconsiderable play of the lips. His speech is throughout clear, well-toned, even, and flowing. Neither inward emotions nor unexpected external impressions, produce the slightest hesitation; he can speak, read, entertain himself indifferently with friends and strangers."

"The total number of stutterers that I have relieved up to this time, is sixteen, and those who are as yet under treatment appear to promise equally favourable results."

The following paragraph is deserving of serious consideration, not less on the part of those afflicted with the serious inconvenience in question, but also by the operator. We are informed that in an operation for stuttering, performed a short time since in London, the hæmorrhoge was fearful.

"In this operation it is more difficult to prescribe for the individual modifications of each particular case, than in the operation for strabismus, and it can never be performed by one who has not the temperament of an operator: the hæmorrhage must hold all others at a respectful distance. The extent and importance of the operation, the possible danger to life, or loss of the tongue, either through the want of skill in the assistants, who may tear it off when so nearly separated,

or through mortification or ulceration of its connecting isthmus. These are contingencies rationally to be feared, and which must be carefully weighed beforehand."

Professor Dieffenbach concludes with a few words of criticism upon the herd of imitators who follow in the wake of talent, which are worth perusing, especially as they are evidently intended as a satire upon the instrument-discoverers, and new-method incubators of squint-cutting. Thus he observes,

"Amidst the prevailing rage for modifying operations, I foresee that my having described the three principal available methods, cannot fail to open to surgeons a vast field for the discovery of modifications, and the creation of instruments. We shall have conical and oblique incisions, from the surface and under the skin! Actual and potential cautery! We shall have knives and scissors with improved curves, and a thousand variously-fashioned forceps and hooks. They will set the blades at angles with the handles to allow a better light falling into the mouth. Opportunity is likewise afforded to professional antiquaries to hunt after a name for this operation. To them I freely make over the right of baptism."

To this we may add a case reported by M. Franz, of London, who performed Dieffenbach's third operation, viz., the excision of a wedge from the root of the tongue on the first of March.

The patient (who was a young man aged 17) bore this severe operation well, but became rather faint towards the termination, and afterwards vomited large quantities of blood which he had swallowed. As soon as he had washed his mouth with a little water, I was exceedingly pleased to hear him pronounce words which, previouly to the operation, he was utterly unable to articulate; such as time, powder, &c.; without the slightest hesitation or stammering, and without any twitchings of the lips, or even convulsive movements of the muscles of the face or neck, and immediately afterwards I was surprised by his saying with facility and distinctness, "there is some blood running down my shirt." He was now put to bed, and desired to keep quiet, and directed not to be allowed to speak, and to have his mouth kept cool by means of cold water. On my calling, in two or three hours time, I found the case proceeding favourably: no reaction had as yet taken place.

"March 9th.—Has for the first time taken a walk in the open air. The movements of the tongue less painful. The mother gives a favourable account of the progress of his speech.

"Perhaps it may be as well to state that the muscles divi-

ded in this operation, are the lingualis, the genio-hyoglossi, the hyo-glossi, and the stylo-glossi."

We here leave the subject without comment; experience alone can decide upon the merits, both positive and relative, of these different operations.—*Med. Examiner.*

Observations on Vaccination and Small Pox, more especially with reference to the theory of Vaccine Influence, and the relation subsisting between the Cicatrix and the character of the Consecutive Variola. By GEORGE GREGORY, M. D., Physician to the Small Pox Hospital.—The observations of the author in the present paper are intended to point out, first, the alarming increase of small pox in the metropolis, as shown by the books of the Small Pox Hospital; and, secondly, the insufficiency of the appearance of the cicatrix of the former vaccination as a test of the degree of protection afforded by the process.

Upon the first point he adduces the fact, that the admissions in the first three quarters of 1840 only amounted to one hundred and forty two, being at the rate of sixteen per mensem, while in the twenty-five days immediately preceding the reading of the paper, they amounted to ninety-three being at the rate of nearly four per diem, a greater number than was ever admitted in one month since the establishment of the hospital in 1746. Of three hundred and sixteen cases admitted in 1840, one hundred and ninety-four had not been vaccinated, of whom eighty-seven died, or forty-five per cent. one hundred and twenty had been vaccinated, of whom only eight died, being at the rate of seven per cent; the remaining two had had the small pox previouly. Of the three hundred and sixteen patients, forty-seven were under five years of age, of whom twenty-eight died; forty-five between five and fifteen, of whom nine died; two hundred and twenty-four were adults, of whom fifty-eight died. The total mortality was ninety-five, or thirty per cent. on the gross admissions. With reference to the second point, the author entered at some length into an explanation of the causes by which the many observed varieties in the appearance of the cicatrix may be explained; and presented the society with two series of well-marked cases, in the first of which severe small pox

occurred in cases presenting perfectly normal cicatrices; whilst in the second, the opposite anomaly presented itself, the lightest and truly varicelloid eruptions co-existing with small and very imperfect cicatrices. In the conclusion of this paper, the author expresses a doubt of the conclusion seemingly derived from the late experiments of Mr. Ceeley, of Aylesbury, of the identity of the vaccine and variolous poisons.

Various questions were put to Dr. Gregory after the reading of his very interesting paper, having reference to vaccination and variola. The more interesting of the points commented upon were, first, the question of the severity of the present epidemic; secondly, the proper period of performing vaccination; thirdly, the ages at which patients affected with small pox after vaccination were vaccinated; fourthly, re-vaccination; and, fifthly, the new lymph, or variola-vaccina.

As to the first, Dr. Webster contended that small pox was not at the present time so general as Dr. Gregory's paper would lead us to believe. He compared the mortality of 1838, the year of the last epidemic, with that of the year 1840, and showed by the tables of the registrar-general, that the mortality in the former was two-thirds more than the mortality of the latter year.

Dr. Gregory explained that the present epidemic did not commence until October, 1840; that of 1838 commenced in the same month, 1837; Dr. Webster would not arrive at a proper conclusion unless he limited his calculations to the last three months of 1840, and compared the deaths occurring in them with those taking place in the same months of 1837. It was known that epidemics required six months to reach their height, and as long a period to recede; that of 1837 reached its height in May, 1838; he expected the present would be most prevalent in May or June of the present year. Under all circumstances, he believed that the present epidemic was not so general as that of 1838. The Small Pox Hospital's entries and deaths had been found during the last thirty years always to bear a direct relation to the number of cases of, and death from small pox throughout London, and he considered that they afforded a sufficient field on which to found a statistical inquiry. On the second point, Dr. Gregory observed, that so long as the vaccine vesicle had all the usual characteristics, and there was sufficient constitutional disturbance, it mattered little as to when vaccination was performed, whether in the first month, or the first year of life. The difficulty of vaccinating very young children did

not depend upon want of susceptibility in the patient, but on the absence of that plumpness which was necessary to be present for the proper performance of vaccination. About the fourth month, this plumpness being usually present, was an excellent time to perform the operation.

Mr. Ceely agreed with the statements of Dr. Gregory, but believed that vaccination might be properly performed in children at the very earliest age, if the skin were merely scratched with a lancet, instead of an attempt being made to insert the lymph by means of puncturing the skin. To answer the third question there was much difficulty; all the information that could be gained from patients being merely, that they were vaccinated in early life. Dr. Gregory had noticed, however, that more cases of small pox had followed vaccination when performed at the adult period, than when it had been effected in infancy. He thought this showed that infancy was the proper period for vaccination to be performed in, and that the effects of the operation were more decided at this period of life than at the adult period, because in the former a less mass of fluid was required to be impregnated with the protective influence of the virus. The fourth month being a time when the constitution was not affected by dentition, or other contending influences, was the best period to vaccinate. As to re-vaccination, he had little experience in the matter; but this he had observed in a family re-vaccinated under his own eye,—that neither the age of the patient, nor the appearance of the cicatrix upon the arm, appeared to have had any effect upon the vaccination; in some there was a mere papular eruption; in others, the vesicle went through its usual course. On the fifth point, Dr. Gregory made inquiry of members whether or no they had used the new lymyh—the variola-vaccine, and if so, with what results? Was it in any way different from the lymph which had been in constant use from the time of Jenner to the present? For his own part he believed it was less certain in its results, and in this respect bore a great analogy to the small pox itself. He had found, for instance, that there was no certainty in the kind of vesicle it would produce; in one person it would be mild, in another irritable; as in small pox we found the confluent sometimes produced mere varioloid disease, and mere varioloid disease sometimes the most malignant kinds of small pox. Mr. Ceeley believed that there was no material difference in the two kinds of lymph: the

varieties observed in its effects being dependent upon the soil into whch it was inserted, and the season in which it was used.—*Trans. Roy. Med and Chirurg. Soc., in Prov. Med. and Surg. Journ.*

Results of Re-vaccination in the Deaf and Dumb Institution of Paris.—The number re-vaccinated was 128—124 pupils, whose ages varied from ten to eighteen years, and four adults, servants of the institution. Of the entire number, 60 were males and 68 were females. The operation was performed from arm to arm; the vaccine lymph was abundant; and the number of punctures made in each arm varied from two to six.

In 25 of the individuals, there neither were any traces of previous vaccination on their arms, although they had no doubt been vaccinated in infancy, nor were there any marks of small pox on their face or body. (The mere absence, however, of cicatrices cannot be taken as a proof that the parties had never been vaccinated, nor had passed through variola.) Of these 25 cases, the vaccination produced no vesicles in 18; imperfect or false vesicles in four; and genuine cow pox vesicles in three only.

Of seven individuals, who had distinct marks of small pox on their faces, limbs and bodies, the operation succeeded perfectly in two, and failed altogether in five of them.

In the remaining 94 cases, there was distinct cicatrices of a former vaccination, the number of these varying from one to four or six; in some, one or more cicatrices were observed on each arm, in others on one arm only.

Now of these 94 persons, ten exhibited distinct cow pox vesicles (after the re-vaccination,) 16 imperfect or bastard vesicles, and, in the remaining 70, the operation failed in producing any effects.

If we take, therefore, the entire number of persons "all well re-vaccinated by me," says M. Meniere, the reporter, "we find that in 15 cases only out of 128, regular cow-pox vesicles were formed over the punctures on the arms; in 20 the vesicles were imperfect or bastard; and in 93 none at all were developed. From these data it appears that the operation took effect in about the *one-eighth* of the whole; in

about the same proportion, *one-eighth*, in those who had never had small pox, and who exhibited no traces of vaccine cicatrices on their arms, although they had been vaccinated at some former period of life; in *one-third* of those who had had small pox in their youth; and in about *one-tenth* of those in whom the cicatrices of a former vaccination were still distinct.

In estimating these results, it may be proper to attend to certain circumstances connected with the cases.

Of the fifteen persons in whom the re-vaccination took complete effect, ten were under thirteen years of age, and the other five were a few years older. In the two young girls, in whom it succeeded after previous small pox, (which had left numerous and most distinct traces on the face and elsewhere) five years had elapsed in one case, and seven in the other, since the date of the attack. Among the pupils who had been vaccinated in their infancy, and in whom the re-vaccination took complete effect, two were twelve years, and the third was fourteen years old.

From these data, we may infer that the preservative or counteracting power of small pox does not exceed that of cow-pox; since, under very similar circumstances, those who had passed through the two diseases were submitted to the same contagious influence, and experienced nearly the same results.

But we are unwilling to draw any general conclusions from the preceding report; as we are well aware that experiments must be made on a much more extensive scale before we can safely do so.

In conclusion, we may state, that several infants were vaccinated for the first time from the vesicles on the arms of those in whom the second operation took effect and that the virus thus obtained seemed to be perfectly genuine and active.—*Med. Chirurg. Rev.* from *Journal des Connaiss. Med. Chirurg.* Sept. 1840.

General result of the Vaccinations and Re-vaccinations in France.—There is in a recent number of the *Annales d'Hygiene et de Med. Legale* a table prepared by M. VILLENEUVE, the reporter of a commission appointed by the Royal Acade-

my of Medicine, exhibiting the general results of the vaccinations and re-vaccinations performed, and of the number and issue of the cases of small pox in those who had been vaccinated, compiled from reports sent from forty-one departments. The results of those reports only are given in which the vaccinators have recorded their unsuccessful as well as successful cases; and wherever the re-vaccinations were described as doubtful, they have been omitted.

We give only the totals.

Vaccinations.			Re-vaccinations after ascertained Vaccination.			Smallpox after ascertained Vaccination.	
Number.	Successful.	Unsuccessful.	Number.	Successful.	Unsuccessful.	Number.	Deaths.
30,410	28,853	560	2199	223	1976	365	8

It results from this table:—

1. That the proportion of cases in which vaccination failed, compared with that in which it took effect—estimated by some writers as one to eight, or one to ten—is not more than about one to fifty-four.

2. That of 2199 cases, in which re-vaccination was performed on persons of different ages and sexes who had been successfully vaccinated at some previous period of their lives, the operation took effect in 223 cases only—which would give the proportion of about one to thirteen or fourteen.

3. That of 365 cases of confirmed small pox, occurring in persons who had been at some previous period successfully vaccinated, there were only eight that proved fatal—giving a proportion of about one in forty-five or forty-six

We know that sporadic small pox usually carries off about an eigth or a tenth of those who are affected with it; and that, when the disease becomes epidemic, the mortality is often as high as one in four. and sometimes even higher.

M. Villeneuve, in submitting the above table as containing the results of the labours of the commission, admits that the data hitherto supplied are far from being sufficient to solve the question submitted by the government to the Royal Academy—whether it is necessary to have recourse to re-vaccination as a universal measure throughout France.—*Am. Journ. Med. Sciences.*

Rupture of the Fallopian Tube from accumulation of the Catamenial Fluid.—"Dr. Munk was requested, early on Tuesday morning, October 24, 1837, to visit R. S., æt 18, who, on his arrival, (about an hour subsequently,) was evidently *in articulo mortis.* Her pulse was barely perceptible, but extremely rapid; the skin was covered with a cold and clammy perspiration; there were low muttering delirium; tracheal rattle; the facies Hippocratica; and a continual involuntary discharge of the alvine contents. She died in a few hours.

"Upon making some inquiries into the history of the case, I was informed that she had never menstruated; that about eighteen months previously, when the evolution of the external organs of generation and the mammæ rendered probable the speedy appearance of the catamenia, she suffered from headache, pains in the back and limbs, cold extremities, and a heavy dragging sensation in the pelvic region, with some bearing down pains. These symptoms, after a brief continuance, subsided, but returned in five or six weeks; again ceased, and then returned after a short interval. This state of things continued for three or four months, the symptoms upon each recurrence remaining longer, and becoming more urgent, whilst the intermission became shorter in duration, and less perfect; so that at last there was no intermission, but manifest exacerbations occurring every fourth or fifth week.

"In January, the lower part of the abdomen began to swell; a deep-seated tensive pain was felt in the pelvis; all her symptoms were aggravated, and there was in addition occasional vomiting. She still, however, kept about her usual employment, and took, by the direction of a neighboring practitioner, some medicines, which, from the description given, I presume consisted either wholly or in part of iron. Under this treatment she got rapidly worse. On Friday the 20th, when stooping, she felt, to use her own expression, something give way within her, and the swelling of the abdomen appeared to subside, as did likewise the dragging and tensive pain abovementioned. Towards evening she complained of diffused pain of the abdomen, which, by Saturday, had so far increased that she was unable to bear the slightest pressure. There was great heat of skin, headache, knees flexed upon the abdomen, some difficulty of breathing, contracted state of the features, nausea and vomiting, with difficulty of, and intense pain over the abdomen, on emptying the bladder. This condition continued until Monday, when she passed gradually into the state in which I found her on the Tuesday morning.

"*Autopsy twenty-six hours after death.*—On laying open the abdomen, I was surprised to find a large quantity of a dark red and thickish fluid (somewhat similar in appearance to blood, which had been for some considerable time effused) lying in the cavity of the peritoneum, and amounting, I should imagine, to twelve or fourteen ounces. The peritoneum, which was everywhere in contact with it, was stained of a reddish colour. On wiping away the fluid with which it was covered, there was an evident increase of vascularity, and in some parts the membrane was covered with a thin layer of coagulable lymph. I searched for the source of this sanguiniform fluid, but for a considerable time without effect. The uterus at length attracted attention; it was considerably larger than the ordinary size of a man's fist, but, nevertheless, flaccid. Upon opening it, I found four or five ounces of a similar fluid to that in the abdomen, contained within its cavity. The fallopian tubes were enormously distended; so much so that I could with ease pass the little finger in them. Close to the fimbriated extremity of the left tube, there was a fissure about two lines in length, with rugged edges, thus forming a free communication from the cavity of the uterus to that of the peritoneum; through this the fluid in question had evidently passed. The lining membrane of the uterus was of a slightly reddish colour, depending, as I imagine, on its contact with the contained fluid. On pursuing the examination, I found an obstruction to the passage of the finger or probe through the vagina. This was caused by the opposition of the walls of the canal, and their junction by firm cicatrization. This cicatrix was from half an inch to an inch in length, and contained a hard tough substance in many respects resembling cartilage. I could find nothing at all resembling the hymen."—*London Med. Gaz., March*, 1841.

Obliteration of the Inferior Vena Cava.—Dr. GELY has recorded, in a recent number of the *Journal de la Section de Medicine de la Societe Academique du Departement de la Loire-Inferieure*, the following interesting case of obliteration of the vena cava.

Gerard, a seaman, 48 years of age, strong constitution, sanguineous temperament, was admitted towards the close of the

winter of 1838, into the hospital of Nantes, with symptoms of anasarca, ascites, febrile oppression, extreme varicose dilatation of the veins of the lower extremities, and of the abdomen, which were also excoriated over several spots. He stated that the varicose state of the veins came on during the winter of 1823, when he had the misfortune to have his legs frozen. He however recovered so far as to be able again to go to sea, where he contracted one of those cutaneous affections so common amongst the negroes. Ulcers and abscesses formed on various parts of his legs, and he was long confined to bed; the varicose state of the vessels increased; and, for the last five or six years, he had been unfit for work. After a residence of a few weeks in the hospital, he died, with all the symptoms of some serious affection of the circulatory organs.

On dissection the superficial veins of the lower extremities presented the appearance of thick cords, doubled on themselves a great number of times, in the same way, indeed, as the *vas deferens* is at its origin. This mass, as it approached the crural arch, increased in volume; but after passing this, in its progress over the abdomen, it diminished in bulk till it reached the false ribs. The varicose veins were perceptibly larger and more flexuous on the right than on the left side. The varicose vessels over the trunk of the body were the abdominal tegumentary vessels, which anastomosed on each side with a large external mammary branch, which terminated in the axilla. The femoral and iliac veins of the right side were filled with false membranes to such an extent as to diminish the calibre of the venous canal to a tenth of its natural diameter. The false membranes became more numerous as they approached the *vena cava*, which was reduced to the state of a cartilaginous cord, as far as the point where the emulgient veins unite with it, above which portion it was pervious, but reduced in diameter.

The right epigastric vein was somewhat narrowed in diameter, but that of the left side was enormously dilated, ascended towards the umbilicus, coursed along the suspensory ligament of the liver, and followed exactly the course of the umbilical vein. The two renal veins were very much dilated, and on the right side an abnormal branch opened into the *vena cava*, and was continuous with the *vena comes* of the crural nerve, which was much dilated, and seemed to receive the blood from the deep vessels of the thigh.

The heart was hypertrophied, with dilation of all its cavities; and osseous concretions were met with around the aortic and auriculo ventricular orifices, as well as in the coats of the aorta.

This case is extremely curious, as showing the mode in which the venous circulation had been kept up in spite of the destruction of the canal of the *vena cava.* Thus, on the right side, the blood from the lower extremity, collected by the superficial veins, passed along the tegumentary veins and external mammary into the axillary vein, and from that into the superior cava; whilst the blood of the deep portions of the same limb was emptied into the *vena comes* of the saphena nerve; and from it into the *vena cava* inferior, above the contracted portion, and lumbo-vertebral venous plexus. On the left side, again, the superficial blood returned to the centre of circulation in the same manner as that on the right side; whilst the venous blood from the deep portions of the limb was poured into the epigastric vein, and from it into the sinus of the *vena portæ* by the umbilical vein.

The opening of one of the epigastric veins into the umbilical vein, and the enormous dilation of the vein which accompanies the crural nerve, and communicated with the *vena cava* inferior, were the two most striking anomalies in this case.—*Gazette Med. de Paris, Nov.* 7, 1841.

Wound of the Heart.—Professor Malle relates in his *Clinique Chirurgicale de l' Hopital d' Instruction de Strasbourg*, the following remarkable case of wound of the heart.

"A soldier, ætat. 31, was amusing himself with a comrade in firing, when suddenly his friend's gun burst, and wounded him. He fell instantly in syncope, but soon regained his senses and complained of a severe pain behind the sternum. He was carried to the hospital, where he presented the following symptoms. About two inches on the inner side of the left nipple, between the sixth and seventh ribs, there was a small wound, which gave passage neither to blood nor to air. The chest was normally resonant beneath it; the patient had some bloody expectoration: the heart's motions were obscure and the pulse feeble; there was dyspnœa: the skin was cold, the face pale, and the patient felt as if he should faint. The surgeon in attendance regarding the greater part of these symptoms as the effect of the fright, ordered some simple means. Four hours after reaction took place, and the patient was bled to ten ounces, after which the expectoration of blood completely

ceased. The pulsations of the heart, however, remained obscure, the pulse was small, and the sternal pain continued; but the face had regained its colour, the heat of the surface had returned, and the threatenings of fainting had passed away; he was bled again in the evening.

"Next day, the patient had passed a tranquil night; the pulse was fuller and regular, at 100; the face flushed but expressive of suffering; the pain behind the sternum continued; the ear distinguished at the part a kind of undulatory crepitation, something like that heard in a varicose aneurism; and there was a little crepitation in the left lung near the heart. Everywhere else the natural respiratory murmur was heard, though the dyspnœa continued; the horizontal position was irksome. The patient was again bled to ten ounces, and cupped over the heart. On each of the two following days the condition of the patient remained unaltered, and the same depletory means were repeated.

"On the fourth day after the accident he was better; he had slept four hours and had lost his faintness. He had less pain, there was no longer any râle, the pulse was less frequent and regular. The improvement continued during the succeeding days; the patient had some appetite and took some light food. The pain behind the sternum was almost gone; but there was still dulness in the precordial region; the pulse remained feeble, and he did not evidently gain strength. His apparent convalescence, though it advanced slowly, would probably have been more marked had it not been twice or three times interrupted by the patient's heat of temper and refusal of being restrained to perfect quietude. After each fit of anger, his cough became worse, the dulness in the precordial region more extensive, the pain at the sternum more acute, and the pulsations of the heart more obscure; and for every such aggravation of symptoms depletions were required and were generally efficient. He continued thus alternately improving and suffering from a return or aggravation of his first symptoms up to the forty-second day after the accident, when his condition was such as to permit a hope that his recovery would be permanent. At this time, however, he was seized, without any evident cause, with erysipelas of the left leg, with fever, &c.; his old symptoms returned with irrepressible violence, and he died on the 14th of May, having received the wound on the 28th of March.

"On examination the brain and the abdominal organs were found healthy. In the chest at the wounded part there was a cicatrix scarcely firm. The right lung presented on its ante-

rior surface and near the heart, a small cicatrix, which was also discoverable under the corresponding portion posteriorly, proving that the lung had been perforated. It was also hepatized for about four inches, and united by some slight adhesions to the pleura. The pericardium was larger than usual, and at first appeared distended with liquid. It contained about five ounces of reddish sanies, and some fibrinous clots, two of which adhered to the heart. A foreign body was fixed in the left ventricle. On closer examination this was found to be a portion of the stock of the gun that had burst; it was situated at the front and about the middle third of the ventricle; its free extremity, which was about as large as a full-sized writing quill, projecting about ten lines; the cavity of the ventricle contained a very firm coagulum extending into the aorta. The piece of wood had traversed the left ventricle and the septum, and projected into the cavity of the right ventricle. Its direction was obliqely from without inwards and from below upwards; its form was somewhat triangular, tapering irregularly from the part that projected in front to that which traversed the septum. The internal surface of the heart was red, and in parts a little softened, especially near the apex; near the valves, on the contrary, the membrane appeared slightly hypertrophied."—*Brit. and For. Med. Rev.* July, 1840.

Case of Punctured Wound of the Ascending Aorta, fatal in fiifteen minutes. By C. R. Gilman, M. D., Prof. Obstetrics and Diseases of Women in the College of Physicians and Surgeons, N. Y.

July 17th, 1841. Examined, by request of the Coroner, the body of M. Riley, aged 37 years. She received last evening a stab from a sword-cane in the right breast; after the wound was inflicted she was assisted into an adjoining room and laid on the floor, where she expired in about fifteen or twenty minutes. A very small punctured wound appeared on the right breast, three and three-quarter inches inward and one inch upward from the right nipple. On introducing a probe, the wound was found to pass downward and inward for near two inches, and then to penetrate the chest, passing between the cartilages of the second and third ribs, close to the ster-

num. Opening the thorax, the cellular substance in the anterior mediastinum was found infiltrated with blood, and the pericardium much distended. A small punctured wound in the anterior and superior part of the pericardium was discovered after considerable search. The sac was next laid open, and found to contain a pint or more of coagulated blood—it was quite full; removing this, a large patch of ecchymosis was found upon the ascending aorta and the arch, in the midst of which a small puncture was detected. The artery was now slit up, and the wound more accurately examined from within. It was V shaped each side, about a line in length, situated about half an inch above the valve, and equi-distant between the orifices of the two coronary arteries. There was no other wound of the internal membrane of the artery or the heart. The instrument would seem to have penetrated but not passed through the organ.

Remarks.—The points of interest in this case are the suddenness of death, and the peculiar V shape of the wound in the aorta answering very exactly to the size and triangular shape of the instrument with which the injury was inflicted. As to the suddenness of death under such circumstances, the majority of authors agree with Margagni (*Ep.* 69, *sec.* 5,) in ascribing it, not to the loss of blood, but to the obstruction offered to the circulation by the blood having accumulated in the pericardium. This, though the common explanation, is, I think, incorrect, or at least incomplete; for there are not wanting many cases where the heart having ruptured, two or three pounds of blood have been found in the pericardium, and yet life has continued for several hours. Olmi, of Florence, gives one; the rupture was an inch long, the patient lived "till next day," "a quantity" of grumous blood occupied the pericardium. Hufeland's Journal gives a case, where the rupture was half an inch internally, larger externally; the man lived three days, two or three pounds of blood were in the pericardium. A similar case is given by Dezeimeris in *L'Experience*, 1839. It is not, then, merely to the presence of a quantity of blood in the pericardium, that death is owing. The other modifying circumstance, is the rapidity with which the blood is effused. Hence death takes place less rapidly in ruptures where the heart's tissue is sound or merely softened, and where the opening is usually made in the direction of the fibres which are merely separated, than in cases where there is an opening with loss of substance from ulceration—the latter almost always proving instantly fatal. In wounds of the heart, those which bisect the two layers of fibres are suddenly

fatal, while in those which, though they bisect one layer, only push apart the fibres of the other, life continues longer: this must be attributed to the manner in which contraction of the fibres opens the one wound and closes the other. It is in wounds of the aorta within the pericardium that hæmorrhage is most free and death most sudden: the blood passes much more rapidly through the opening in the thin coat of the vessel than where it has to make a devious way through the thick paries of the heart. Even these, however, are not always suddenly fatal. In the Journal de Medicine, vol. 40, p. 435, a case is given where the patient lived to the sixth day; the aorta was penetrated near its origin. Leroux gives a case where death did not occur till the eleventh day, though the aorta and the right auricle were both wounded. This is the more remarkable, as wounds of the auricle are generally more quickly fatal than those of the ventricle. Pelletan, in his Clinique Chirurgicale, t. 1, p. 92, gives a case not fatal till after two months: the wound of the aorta was near the crura of the diaphragm. A case of rupture of the aorta is reported in the Medico-Chirurgical, April, 1840, p. 612, where the patient lived ten hours. The opening however, was not direct, the inner coat of the vessel gave way immediately behind the semi-lunar valve and close to the mouth of the posterior coronary artery, while the outer coat burst further up, where the arch emerges from behind the pulmonary artery.

The shape of the wound through the aorta in this case, is worthy of notice. The wound through the skin had no peculiarity to distinguish the instrument by which it was inflicted —it was very small and nearly circular—but that in the aorta was triangular or V shaped, and exactly answered to the shape of the weapon. This shows the importance of examining for the shape of the wound, not in the skin only, but internally, particularly when the instrument has passed through a dense fibrous membrane.—*N. Y. Med. Gaz.*

Ligature of the common Carotid Artery, and Experiments on the Ligature of both Carotids in Animals.—M. Jobert, de Lamballe, has addressed a memoir to the Royal Academy of Medicine, containing a case where he tied the common carotid to cure an erectile tumour of the orbit, and also the result of his experiments on living animals, to determine the influence that ligature of both carotids would have upon them.

Ligature of the common carotid on either side does not stop the course of the blood through the ramifications of the tied artery; how then can it effect the cure of erectile tumours of the face and head? M. Jobert replies, 1st, by the sudden subtraction of a large quantity of blood from the tumour; 2d, by giving an obstacle to the transmission of the impulse of the heart, in its full energy towards the tumour. He has convinced himself by his experiments, that beyond the ligature, the blood runs in a continual jet, waving, and without jerk (*saccade.*) His conclusions are, 1st, that erectile tumours of the orbit, destroy the bones after the manner of aneurism; 2d, they have the characters of aneurismal tumours, and are cured by ligature of the common carotid of the same side; 3d, the cure is not owing to obliteration of the artery beyond the ligature, but to diminish all impulse of the column of blood arriving in the tumour; 4th, the vertebral arteries suffice for the cerebral circulation after ligature of the carotids; 5th, dogs, sheep, and rabbits do not experience ill effects after this operation; 6th, horses on the contrary do not survive it, dying with pulmonary apoplexies; 7th, blood-lettings before or after the ligature, diminish the intensity of the pulmonary lesions; 8th, perhaps in man, the loss of a certain quantity of blood after the operation, would have good effect.—*Rev. Med. Sept.* 1840.

MM. Berard, Gimelle, and Larrey, who were appointed as a committee to examine the memoir of M. Jobert, consider it of importance; 1st, as adding two cases of cure of erectile tumours, one in the orbit by ligature of this carotid, to four other cases previously recorded; 2d, as the experiments prove the harmlessness of ligature of both carotids, in those animals whose vertebral arteries enter the cranium of a calibre sufficiently large to keep up the cerebral circulation and avoid pulmonary congestion; 3d, as it proves that the brain and the organs of the senses preserve their functions entire after this ligature; 4th, as it places beyond doubt, that animals who from their anatomical construction survive the ligature of the common carotid arteries, are not affected with lesions of the organs of the senses as described by authors; 5th, as these experiments and their results will exercise a great influence on the surgical therapeutics of diseases, for the cure of which ligature of the common carotids might be proposed.—*Ibid.*, from *Bull. de l' Acad. Royale de Med.*, Oct. 15 and 30, 1840.

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THE LEVIATHAN DISCOVERED AT LAST.

During the past year, Albert Koch, a German emigrant, has been exhibiting in St. Louis, New Orleans, Louisville, and Cincinnati, an assemblage of large fossil bones, designed to represent the skeleton of an immense, extinct, amphibious animal; which he has ascertained to be the LEVIATHAN of the Bible, and to constitute a new genus, distinct from the elephant, mastodon, ichthyosaurus, megalonyx, whale, behemoth, and all other existing or extinct monsters, either of land or sea. This happy discovery was made in the diluvial grounds of *La Pomme de Terre*, a branch of the Osage river, in the state of Missouri, lat. 40° and lon. 18° west from Washington.

According to the discoverer, the Missouri Leviathan, or Missourium, as he likewise calls it, had not only a magnitude but peculiarities, which constituted it one of the most remarkable productions of nature. Its length was 32 feet, height 15, breadth through the breast 10, and the tips of its tusks were 20 feet apart; it had no proboscis; but to make up for this deficiency, was furnished with a pair of collar bones, and was web footed! An animal of such size and

singularities, could not fail to attract us as well as all others who delight in the wonderful, and we accordingly crowded in with the crowd. Great, however, was our disappointment, in finding nothing more nor less, than a grotesque assemblage, of what in the west are called mammoth bones—in other words, a very good collection of materials for reproducing a skeleton of the gigantic mastodon (*M. Giganteum of Cuvier.*) This fact, sufficiently apparent from a first view of the monstrous superstructure, was rendered absolutely certain, by the inspection of particular bones; such for example as the teeth and tusks, the jaws, the vertebræ and the feet. But, how, it may be asked, could the Leviathan of antiquity be reconstructed out of a mastodon? We answer as follows.

The spine of the mastodon consists of 29 or 30 vertebraæ or joints; but Mr. Koch has strung on an iron wire, no less than 41, drawn from different animals, and placed them at such distances from each other, that their oblique processes do not touch; filling up the intervals with single or double blocks of wood, about two inches thick. In this way he added about 10 feet to the length of the spine, the middle of which he bent upwards: and then suspended the whole (at a suitable height to make a monster) from a strong wooden frame. He next collected 48 ribs, instead of 46, and disregarding their sockets, set their ends along the spine, mostly above the oblique and transverse processes, not neglecting to give them an upward flare. These ribs are not of greater length than those of the mastodon and do not differ from them in form. He then, building downwards, constructed a pelvis, which appears to be composed of the bones of two individuals. He did not, however, apply the articulating surfaces of the ossa ilii to those of the sacrum; but sunk them almost below that bone. Then came the thigh bones, with their heads several inches below the sockets; to which succeeded the bones of the legs, at the same respectful distance, and with their lower ends separated quite as far from the feet. In reproducing and applying the fore-legs, the same rule was followed, by which the scapulæ, instead of embracing the spine, lap over the lower ends of the ribs but a few inches. Thus it was, that he filled up the space between the suspended spine, and the platforms which support the feet. Now for the width, 10 feet from one shoulder joint to the other. This was easily obtained, by causing the ribs to project, laterally, and then not even bringing the scapula into contact with them.

As to the alledged clavicles, we saw two bones suspended by wires

in a downward direction, in front of the shoulder blades, but so far separated from each other, as to have required a sternum five or six feet in width! No sternum, however, was found with the other bones. From their height, we could not make a close inspection of these bones, but from their size and appearance, suppose them to have been the two first ribs, of the mastodon, or some other animal, possibly the megatherium, to which they bear a resemblance. At first view, we thought they might even be the recurrent scapulary processes, as those projections had been broken off. Without, however, insisting on any of these conjectures, and especially the last, we may affirm that they are not what they are here made to appear, as no animal having the kind of bones which make up this *compilation*, ever had a clavicle.

Let us descend to the feet and toes. These are precisely those of the mastodon. But the bones are not placed compactly, with their articulating surfaces in contact, but sprawled out to create interspaces, for those webs, which the discoverer coolly informs us, connected the toes together. In the fore-feet one of these toes is fastened to the lower end of the radius instead of the carpus!

We come, finally, to the head, the superior portions of which have decayed. The grinders of the upper jaw have their processes or denticules worn down, while those of the lower are entire, indicating, apparently, that they had belonged to different individuals. Over the mental foramen on the left side of the lower jaw, there is a rough amorphous, bony process, on which the discoverer lays great stress; but, as it is wanting on the other side, and manifestly never existed there, we are constrained to regard it as an exostosis. The tusks are not in their sockets, which are much decayed; but have their maxillary extremities placed near the apertures, and thence pass off, almost horizontally, with their convexities directed forward. The reason assigned for this disposition is, that they had it when discovered. But even admitting the fact, it does not prove that they had that direction during life. As their sockets and ends were both considerably decayed, they were not firmly infixed, and by a mere sinking of the upper jaw, from the superincumbent pressure, would appear to pass off in a horizontal course. In another jaw-specimen of the same kind of animal, exhibited by Mr. K., the tusk advances obliquely downwards, and forwards, having its point turned a little outwards, and upwards, as in the elephant. This was no doubt the position of the tusks in the Missourium.

The assertion that this animal had no trunk or proboscis, seems to be entirely gratuitous, and contrary to all analogy. From the height which it really had, to say nothing of that claimed for it by the discoverer, it was quite impossible that its lips could reach the ground.

We have explained the mode, in which Mr. K. has contrived to give his skeleton dimensions, which it had not in nature. But to show, in a different way, that its size is greatly exaggerated, we shall present a tabular view of some of its principal bones, and of the corresponding parts of Peale's skeleton, in the Philadelphia Museum.

We adopt the admeasurements of Mr. K. as stated in his pamphlet without vouching for their accuracy—the others are from the second volume of Godman's American Natural History.

BONES.	Koch's Skeleton.		Peale's Skeleton.	
	Feet	*Inches.*	*Feet*	*Inches.*
Length of tusk,	10	0	10	7
" " largest grinders,	0	7	0	7 1-10
Longest vert. including spinous process,	2	6	2	3
Length of scapula,	3	1	3	1
" " humerus,	3	5 1-2	2	10
" " ulna,	2	7 1-2	2	5 1-2
" " radius,	2	3 3-4	2	4
" " femur,	4	0 1-2	3	7
" " tibia,	2	4 3-4	2	0
" " fibula,	2	6 1-2	2	2

From these admeasurements it appears, that the height of Koch's skeleton, from the forefoot to the top of the scapula, is 8 feet 10 inches, that of Peale's 8 feet 3 inches—difference only 7 inches. But we know, that Peale's is not a large skeleton, as larger detached bones than any in his, have been found. Thus in 1802, Dr. William Goforth, of Cincinnati, dug up at Big Bone Lick, a tusk that measured 11 feet 6 inches. We may then positively pronounce, that the Missouri Leviathan, is not only the common mastodon, but a specimen of the *common size*.

This conclusion, so much at variance with the unqualified assertion of the exhibitor, may justify our devoting a paragraph to the theory on which, we presume, he proceeded in building up the huge

amorphous fabric, which he is now imposing on the community, as the "greatest monument of antiquity."

It is quite evident, that the task he proposed to himself, was to construct a LEVIATHAN, out of the bones he had found in the banks of the Pomme de Terre and other streams. To do this, as near as possible according to the 41st chap. of the book of Job, he places it in the water, and gives it web feet, then disposes of its tusks horizontally, separating their tips 21 feet asunder, so that it might not traverse the forest; finally, he takes away its proboscis, "so that thou canst not put a hook into his nose," (vers. 2nd,) and, because its presence would ally his monster too closely to the elephant and the mastodon for popular effect.

In his pamphlet Mr. K. endeavors to present himself as a comparative anatomist; and in his explanations to visiters he speaks as flippantly of the extinct races, as if he had been the Cuvier of the age in which they flourished; but in his advertisement we see the showman far ahead of the naturalist, as will appear by the following extract from one of them, with which we close our notice.

"This skeleton is universally acknowledged as the greatest phenomenon ever presented in natural history.

"In viewing it, the observing and thoughtful man will be lost in wonder and astonishment, at the immensity of the vast relic, and how shall we express our conception of this monstrous animal when in the full zenith of his mountains of flesh and rivers of blood, and in all the vipor of Omnipotent life, he moved in awful and terrific grandeur on the face of the earth, the sovereign masterpiece and proudest monument of all creation."

ELEPHANTS AND MASTODONS.

Having dipped into zoology, so far as to notice an exhibition of huge fossil bones, we are constrained to add a page, on the anatomical characters of the extinct elephants and mastodons, whose remains have been found in various parts of the West. To many of our readers, this may not be acceptable, because they are already acquainted with the subject,. but there are others who live in places so remote, that books of zoological science seldom or never fall into their hands. To such what we propose to say may not be unwelcome.

The elephants and mastodons constitute two distinct, but kindred

genera, belonging to the family of *proboscidia*, of the order *Pachyder-mata*, of Cuvier—the former of these terms indicating the presence of a proboscis or trunk, the latter a covering of thick hide. We have seen both in the elephant, but neither in the mastodon; because of the perishable character of those parts. In ascribing them to the latter, therefore, naturalists have been guided by analogy. Let us consider these genera separately.

The genus ELEPHAS of Linnæus, is characterized by eight grinders, or molar teeth, two in each side of each jaw; by two tusks, projecting from the anterior part of the upper jaw, and by a proboscis. But to make the generic character complete, we must attend to the surfaces of the teeth. These are flat, and instead of having a layer of enamel spread over them, present that substance in transverse plates, rising up through the substance of the tooth, and separated from each other by thicker plates of bony matter. The tusks are solid; and as they descend from the jaw, diverge from each other. Their points turn upwards, and consequently their convexity is directed towards the ground.

Two living species of elephant are known, one of which inhabits Africa, the other India. In addition, the teeth of another species, or perhaps, of more than one, are found both in the old world and the new. To this species, Blumenbach has given the specific name *primogenius*. Its detached grinders have been repeatedly found in the western states, in our alluvial grounds, sometimes tolerably solid, but more commonly in a crumbling condition, the bony part being converted into a friable substance almost as white as chalk. The plates of enamel are in pairs joined together, at the side of the tooth, and exhibit the appearance of the end of an elastic tube, compressed between two planes, until its sides are brought nearly parallel to each other. These grinders are worn down obliquely, so that the distance from the crown to the root, is less at one end than the other. The tusks of this elephant have not been distinguished from those of the mastodon, with the bones of which, the grinders we have described have generally been found. As yet, no skeleton has been discovered, and it has, therefore, been conjectured that the *E. primogenius* became extinct at an earlier period than the mastodon; so early, indeed, that the bones have entirely decayed. Nevertheless, we know still more of the osteology of this animal than of the mastodon, as it is, in fact, no other than the mammoth or arctic elephant found, at the

beginning of this century, embedded in ice, near the mouth of the river Lena, in Siberia.

The teeth of the genus Mastodon, differ from those we have just described, first in number, second in the form of their surfaces. They consist of four in each side of both jaws, which, however, are not all present at the same time, as the two anterior are milk teeth, and, falling out, are not replaced. The surfaces of these teeth present from two to five transverse wedge shaped projections, deeply indented in the middle, so as to give the appearance of two ranges of conical or teat-like processes—whence the name of the animal. The enamel of these grinders is not disposed in vertical plates as in the elephant; but spread over the surface, so that when the processes are worn down, each one presents a bony surface, more or less rhomboidal, surrounded with a margin of enamel. The tusks of the mastodon are solid, but generally so far decomposed as to break when removed, except they be carefully handled; their places of insertion in the intermaxillary bone of the upper jaw, and their direction from it, are the same as in the elephant.

Cuvier has recognized several species of this genus; but one of them, however, is well known—the *M. giganteum*, with the remains of which we are familiar in the western country. The others are much smaller, and no skeleton of any one of them has been yet exhumed. The bones of the gigantic mastodon have been found in every quarter of the globe; but more frequently in the valley of the Mississippi than in any other country. The size of this animal seems to have been about the same with that of the Asiatic elephant.

THE TETRACAULODON.

We shall conclude with a brief notice of the remains of an animal confounded with the mastodon, till twelve or fourteen years ago, when the late lamented Dr. Godman separted it into a new but closely allied genus. The characters of the grinders are so nearly the same with those of the mastodon, that we need not, for our present purpose, state them. The essential difference in the dental system of the two, is to be found in *a pair of short tusks in the chin, or anterior part of the lower jaw;* giving to the animal four instead of two, as in the mastodon, and procuring for it the name prefixed to this article, which signifies four tusks. The specimen from which the Doctor made his

description was small, and appeared to be young; but before his paper was read in the philosophical society, he came to the knowledge of another, which must have been nearly or quite as large as the mastodon of Peale's Museum. Since the death of Dr. G. his friend Dr. Hays, has read a paper to the same society, in which he confirms this discovery, and endeavors to show that more than one species existed.

We trust that such of our friends as have the good fortune to meet with lower jaws of what are called mastodons, will examine for these small tusks, or the sockets from which they have fallen out.

D.

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

The very respectable Professor Dickson, has favoured us with a copy of the annual announcement of the college, with his valedictory address to the class. The number of students in the late session, was nearly 150; of whom 41 were from seven other states of the South, chiefly North Carolina and Georgia, all the rest from South Carolina. The number of graduates was 51, of which 41 were from the state. The last class of the Medical Institute of Louisville, consisted of 208, but 71 of whom were of the state of Kentucky, the remaining 137 from 14 other states. More than two-thirds of the whole class in the former, were of Carolina, while only about one third in the latter, were of Kentucky, a point of view, under which the two schools differ in a very remarkable degree. In every thing, the palmetto state seems to be exclusive. There is another difference in the statistics of these institutions. The former graduated 51 out of less than 150—the latter but 48, of 208. From this we infer that a larger proportion of the students of the South, continue their university studies till graduation, than of the West.

But we must leave these statistics and the train of reflections which they start, to say a word of the Professor's valedictory. Many of these addresses, including our own, have in them scarcely any solid substance; but no complaint of this kind can be made of that before us. With very few exceptions, it abounds in most wholesome and perti-

nent advice, uttered in a style of great purity and polish. We were particularly struck with the elevation of its moral and religious views. The author's exhortation to "mildness, gentleness, and courtesy, mingled with a dignified self-respect," and his admonition against carrying or using concealed weapons, are worthy of a guardian of young men, destined to labour in the very bosom of society, at a most honorable vocation. But why should he have passed by duelling? It is impossible for us to believe, that the author of an address which breathes such a pure and peaceful spirit, can approve of that savage custom; or that a man of his high intellectual endowments can admit its necessity to the well being of society. D.

DEATH OF PROFESSOR WAGNER.

Having corresponded occasionally with Prof. Wagner, of the South Carolina College, for the last fifteen years, it was with more than ordinary regret, that we lately heard of his decease. The particulars have not yet reached us. His successor, we understand, is to be the learned and able Dr. Geddings, who will be transferred from the chair of Pathological Anatomy to that of Surgery. D.

MEDICAL SOCIETY OF TENNESSEE.

In a former number, a fuller notice of the doings of this society, at its late meeting in May, was promised, and as a fulfilment of that promise, we have since devoted much of our space to the papers read on that occasion, deeming this the most satisfactory account that we could present. It is not, we confess, without some misgivings, that the first article in this number is published, and our readers must find our apology for it in the fact, that the very respectable society before which it was delivered requested its publication. It is our purpose to make the Journal as practical as we are able, and such a discourse,

we are aware, however interesting the great topic of which it treats, cannot lay claims to this character. Even the request of the society we might have felt ourselves at liberty to disregard, if it had not been backed by a scarcity of matter which left us but little choice in the selection of articles. Our contributors, we are sure, will not often allow us to offer the latter apology. Y.

THE VAPORS OF NITRATE OF POTASSA IN ASTHMA.

I have lately met with some cases of asthma, in which great relief was derived from inhaling the vapors arising from the decomposition of nitrate of potassa. The patients, after saturating white paper with a solution of the nitrate, and drying it thoroughly, set it on fire, and, dropping it into some close vessel, inhale the gases evolved by the combustion. A teapot answers well for the purpose, but it is sufficient to drop the ignited paper in a common glass tumbler, applying the mouth to it while it is filled with the vapors. The relief has been manifest in several cases, and in one, complete. The subject, a gentlemen aged 55 years, had been afflicted with asthma for more than twenty years, the paroxysms of which were marked with all the distress that attends that disease. For five years past he has been exempt from it, and his restoration he attributes entirely to this remedy. He was in the habit of carrying with him, in his pocketbook, paper prepared for the occasion, and of resorting to the fumes whenever he was threatened with an attack.

A lady, of about the same age, has derived great benefit from these inhalations, in the same disease. The paroxysm is always shortened, and greatly mitigated, by a resort to them.

At present, I have a patient under my charge, laboring under a pulmonary affection, one of the most afflicting symptoms in which is dyspnœa. For this, he has been inhaling the vapors of the nitrate for some days, and the result is, that he expectorates with more freedom and ease, and his breathing is much improved. In his case the remedy does not promise so much, as there is reason to fear the existence of organic lesions. Y.

TUBERCLES DEVELOPED BY INTERMITTENT FEVER.

The development of tubercles, it is well known, is favoured by whatever causes impair the healthy tone of the system. Tubercular consumption, for a year or two past, has been more common than usual in some parts of Tennessee, and it is worthy of remark, that intermittent fever also prevailed in those places, to an unusual extent during the last two autumns. Visceral obstructions have attended many of these cases of intermittent, rendering the cure difficult, and where the chills have continued to recur through the winter and following spring, phthisis has been but too frequently the consequence. This, indeed, is now one of the most dreaded of the sequelæ of intermittent fever in that region of country, and increasing the necessity of arresting the disease as early as possible. In a former number we have spoken of the preparations of iron as adapted to cases of obstinate and protracted chills and fever, removing the anemic condition of the system which attends upon them; and we have now, upon the authority of some of the practitioners of Tennessee, to mention the sulphate of copper as a remedy which has been found superior to the salts of iron in this form of the disease. Y.

LITHOTOMY.

This operation was performed with complete success by Dr. Debow, of Hartsville, Tenn., on the first day of last May. The subject was a negro boy, belonging to Mr. Stubblefield, four years of age. The stone removed was as large as a pigeon's egg, and was of the fusible variety.

Dr. Debow is one of half a dozen young surgeons in Tennessee who have operated for stone in the bladder, within a few years, and with a success not surpassed by veteran surgeons. Of five and twenty such operations, performed upon patients of all ages, which have come to our knowledge, not one has had an unfavorable termination.

Y.

THE WEATHER.

The range of the thermometer, this summer, has been high. In June, for many days, it rose regularly above 85°, and not unfrequently exceeded 90°. Once or twice it was seen as high as 93°. In Rutherford county, Tennessee, cholera infantum made its appearance during the first fortnight of this hot weather, and a number of cases have been so bad as to demand the attention of a physician; but a majority yielded to the domestic remedies prescribed by the parents, or to an occasional dose of calomel. In a severe case, which we saw, the most signal and immediate relief was derived from allowing the little patient to eat freely of ice. The incessant retching with which it had been tormented ceased in a few minutes after it had begun to swallow the ice. It is now perfectly restored. In another case, we thought the stage of convalescence was hastened and confirmed by the use of the prussiate of iron. Y.

THE LOUISVILLE MEDICAL INSTITUTE.

As usual, the dissecting rooms will be opened on the first of October; and in addition to giving the ordinary instructions in dissecting, the Demonstrator of Anatomy will deliver, during the month, a course of lectures on Surgical Anatomy. The Professor of Surgery also, will deliver lectures on diseases of the eye, strabismus, and club-foot. We think that students will find it greatly to their advantage to spend a month in this way previous to the commencement of the regular lectures. H. Miller, *Dean.*

DUNGLISON'S AMERICAN MEDICAL LIBRARY.—NEW SERIES.

We have received the first number of the new series of the Library and Intelligencer. It will be issued, hereafter, once a month, instead of semi-monthly, and at $5 a year, instead of $10. The well earned reputation of the editor, and "the high character it has hitherto sustained will be a guarantee of its future excellence."

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